17th EOE Conference

The Mediation of Experiences by Technology in the Outdoors

Opening or Losing Connections with the World

European Institute for Outdoor Adventure Education and Experiential Learning (EOE)

in partnership with the

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Selection of conference papers

19th- 23rd September 2018, CŠOD Bohinj, Slovenia

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The Thing With Digitalisation

About the risk of increasing estrangement from nature

Peter Becker
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The existence and development of outdoor culture would be absolutely inconceivable without the existence and development of technical equipment. If individual practices were deprived of technical outfit, there would be no sailing cruises on windswept, rough waters, no cross-country courses would be set through forests deeply covered in snow, there would be no exciting rides over turbulent waters, no bicycle tours through foreign countries, nor would there be downhill rides over arm-thick roots and over moving passages of scree. We would not be able to climb mountains, cross firn-covered glaciers, bivouac high above the tree line or walk through blossoming mountain pastures. There would be no memory of moments of fright, overwhelming joy, pride of achievement or humble failure.

Thus, outdoor culture is always at the same time also technology culture. The two cannot be separated from each other. This also means of course that we cannot understand the social world of the outdoor actors correctly if we do not take their material world into proper consideration. Therefore, the EOE, as an institute whose aim it is to understand the European outdoor cultures in their developments and to reflect on their practices, always needs to take a close look at the development of their technical equipment and their consequences again and again. The first step in this direction was the 6th conference "Old Traditions – New Trends", which took place in Brathay in 2004. The fact that now, over a decade later, the issue is picked up again, but in a much more focused way than earlier, by the conference "The Mediation of Experiences by Technology in the Outdoors", is indebted to CSOD, which has issued the invitation to the meeting in Bohinji together with the EOE. Since the Brathay meeting, mechanisation processes especially in the area of digitalisation have not only accelerated but they have also entered public awareness much more strongly, possibly due exactly to this acceleration, which has logically resulted in the fact that "Uses and consequences of digital equipment in the outdoors" makes up a large part of the conference agenda.

Rarely has technical development exposed the ambivalent basic structure of technology to such a degree as digitalisation. On the one hand, there is the fascination with the enormous capability of technologies, supported by financial investors and developed in Silicon Valley,

that we experience very closely every day in our cars, at work, at home, when shopping, etc. On the other hand, there is our alarm when we learn that our lives are controlled behind our backs by interests of gain, using algorithms devoid of any empathy or ethics, that Big Data Analysis spies on us, monitors and manipulates us most brazenly, that our "clickstream" serves to exile us into exitless "echochambers" or "filter bubbles" (Kurz/Rieger 2017).

One could now argue that this may well be true for digitalisation processes, but what does this have to do at all with such harmless and useful objects such as sleeping bags, Arctic-grade anoracs, tents, crampons, canoes, etc.? They do not spread terror, but we covet these objects that enable us to spend time in beautiful, wild, unknown nature. They can make our wishes come true. Against the backdrop of everyday life, they provide the promise and the association of a different, in a positive way a freer, more beautiful, more exciting, more simple and more authentic life.

But even where technical things, as in outdoor practice, are servants of playful self-realization, they do not escape the antithetic basic structure which is always grounds for win and loss assessment but which also always raises the follow-up questions as to the anthropological self-placement. Especially where outdoor activities are connected to pedagogical contexts, which are always concerned the care and teaching of cultural-technical equipment to future outdoor generations, these questions are gaining a critical significance. However, it is first of all the excesses of outdoor culture that catch one's eye.

Some tales in Greek mythology already discuss the ambivalent basic structure of technical things, such as in the story of Daedalus and Icarus for example. Daedalus - the imaginative one - as Köhlmeier (2011) writes, was probably the most famous inventor in ancient mythology. Exiled to Crete by the Athenians for his murder of his nephew Perdix, he incurred the disfavour of King Minos, who imprisoned him in the famous labyrinth of the horrible Minotaur after he had helped Theseus kill the monster aided by what has since become known as "Ariadne's thread". Thus incarcerated he pondered on how to escape from the island together with his son Icarus. He collected feathers and stuck them together with wax to make wings. Before taking off with the aid of these wings, the father strongly advised his son not fly too low to prevent the feathers from touching the water, but also not to rise too high to prevent the sun from melting the wax. But once in the air, Icarus threw the warnings to the wind. Driven by the feelings of freedom and release from his earth-bound existence the artificial wings gave him, he rose higher and higher until the increasing heat of the sunbeams ended this ecstatic sense of omnipotence and melted the wax that held together the feathers and he fell into the sea between the Aegean islands of Chios and Icaria, which is still today called the Icarian Sea.

There is a message in this story. While Daedalus is well aware of the limits of his technical equipment and leaves the island flying at *medium* height, Icarus overestimates the potentials

of the technology, without realising that by doing this he also grossly overestimates his own potentials, which are pre-determined by his anthropological make-up. He loses the measure of what is reasonable and possible. In his immoderate arrogance he takes what he is not entitled to. In unchecked self-indulgence he soars higher and higher. While in the character of Daedalus technology remains subordinated to self-preservation, there is a divine warning attached to the character of Icarus not to believe that technology could assume a God-like function of creation and re-create the nature of human beings. Whoever claims this for themselves will meet a tragic end.

A modern example of such overestimation of one's own capabilities induced by the possession of technical means occurs year by year when the time window opens that allows people to climb Mount Everest. We are then flooded with miserable and pathetic pictures not only of corpses left lying along the ascent route but also of people who are carried to the summit, who are dependent on oxygen bottles that had been hauled up by Sherpas, of an endless line of figures torturing themselves and being kept together by their equipment. They do not only destroy the reverend sublimity of the mountain and reduce it to availability, but technology seems to turn them into willing creatures who seem to have lost any sense of dignity and restraint. But one does not have to travel all the way to Asia. The pointed comment by a mountaineer saying that mobile phones were destroying the Alps is directed at the enormous power of technology to lure people into an exaggerated sense of their own capabilities. Increasingly, people with little or no alpine experience enter regions that far exceed their abilities. When they are stuck, or their situation has become hopeless, they just use their phones and ring the mountain rescue service and get themselves taken out by helicopter. No comment necessary.

These observations may be of significance for the cultural critic, as they express tendencies in the deep structure of the outdoor development that strives for immoderate and excessive appropriation of the world, which far exceeds any need for anthropological self-assertion. In a quasi God-like act, technology is supposed to overcome the fundamental imperfection of the human being in an area unnecessary to human life, such as in an alpine undertaking. The following example may serve to clarify how deeply the secret wish for omnipotence is deposited in technical apparatuses. Even from the seemingly harmless wiping across the screen of the smartphone to check the location and route on a mountain hike can be read as the demand and the expected effect of divine "Let there be".[1]

For outdoor pedagogues, such cultural-critical flights of thought may be far remote from their professional interests. However, the ambivalence of technology is becoming increasingly

[1] About the secret technology dreams of homo faber compare O. Müller 2010, which also covers Blumenberg's theological thoughts about switching technical apparatuses on and off.

noticeable also in their everyday work. How could it be otherwise, if one looks into a modern child's room. Equipment and language clearly identify their occupants as digital natives. Televisions, PCs, HD monitors, computer games, tweeting and posting, influencers, iPods, Facebook, Instagram, DVDs, Playstation 3 and XBox 360, mobile phones, blue ray media, camcorder, browser, navigators, controllers and whatever else all these gadgets and functions may be called; the mouse and joystick rule the child's room. They navigate children and adolescents through the reflections of reality, which are offering increasingly higher resolutions and thus give the impression of being genuine, but which, despite this technical effort, always only remain copies of reality. In the world which enters the rooms of children and adolecsents by means of displays and screens one does not need to touch, smell, taste for orientation; neither autumn storm nor spring breeze, neither rain nor sun nor snow leave traces on one's skin. Nobody climbs trees, balances on tree trunks, jumps across a rivulet or falls into one.

According to what I know, the effects that this early reduction of engagement with the real world to engaging with its copied images only has on children's Bildungs development has not been conclusively clarified yet. In a clipped form, it seems to me that the nature deficit (Louw 2008) may be responsible for adiposity, fears and attention deficit disorders. If at all, it is digitalisation which is responsible for both nature deficit and pathologies. If one were to treat the nature deficit by means of outdoor education, say as compensation, it would only treat the symptoms, which would not change anything at all about the underlying structures and sources of the suffering. And this structure seems to be taking an ever greater hold, also in areas relevant to our work. In the same way that almost 300 years ago industrialisation just developed, practically without any chance of control, today digitalisation is establishing itself behind our backs.

In the following I would like to give two examples that are representative of this tendency.

1.The German Kellerwald national park in the north of Hessen has a centre in which visitors can watch a 4D sensory film that aims to create a nature experience that is as natural as possible by providing not only beautiful, brilliant pictures but also wind, for example, which even shakes visitors' seats at the right moments. Colleagues have reported that after watching the film it is very difficult to persuade children to come out on the Kellerwald path. They find the concrete reality with all its obstacles and efforts much too cumbersome in contrast to the fascinating copied image with its fantastic colours, precise zoom settings and exciting perspectives. Then also lured by the sausage kiosk, the forest wilderness is forgotten and the children are contented consumers of a nature that is staged by technical apparatuses. The nature park is building its own obstacles which make access to it difficult.

2. How the increasing digitalisation does not leave engagement with nature untouched can be shown with an example from England. The culturally much esteemed Oxford dictionaries published a modernised junior edition (for approximately 7-year-olds) in 2007. At the beginning of 2015, 8 years late, 28 writers published an open letter to draw attention to the publisher's headword policy. Newly included in that edition were terms like blog, MP3 player, database, EU, chatroom, voicemail, celebrity, citizenship, block graph, broadband, bungee jumping, etc. Deleted were, for example, cauliflower, chestnut, canary, mistle toe, fern, stork, kingfisher, minnow, plum, stream, larch, mint, lavender, tulip, gold fish, hamster, guinea pig, buttercup, clover, willow, dandelion, etc. (Atwood, 2015).

With these decisions the possible world of roughly 7-year-olds is put into a selected terminological form and is thus charged with significance. The newly chosen head words describe a childhood whose reality is determined by digital terminology. It takes leave of a childhood with pets and a rural, natural reality full of flowers, trees and animals. There is a discernible switch from outside to inside, from a concrete to a virtual, simulated world. In his book "Landmarks" (2015, 3) Macfarlane writes, "For blackberry read BlackBerry".

The dictionary is like the linguistic coding of the end of the old world and the beginning of the new one. Again Macfarlane (ibid., p.24)

> "It is not, on the whole, that natural phenomena and entities themselves are disappearing; rather that there are fewer people able to name them, and that once they go unnamed they go to some degree unseen. Language deficit leads to attention deficit. As we further deplete our ability to name, describe and figure particular aspects of our places, our competence for understanding and imagining possible relationships with non-human nature is correspondingly depleted."

Let us, for a moment, follow the idea of Latour according to which things develop a life of their own - turn into actors - and exert a network-like influence on our social world. Putting it in correspondingly animistic terms, the increasingly more powerful and in Latour's theory not uninvolved digitalisation is turning the human being into an instrument which, by means of clever head word policy, reduces the disturbing factor or nature and its significance in order to create free space for further expansion through this type of semantic cleansing.

Is all this proof that we are on the way to the end of outdoor education? I do not know. In any case, it still exists: nature. It has only become more difficult to defend it against its digitalised copy and to hold a eulogy on the unshakable support it offers in the context of successful Bildung's processes that go beyond the conceptual and rational approach to the world, which the digital versions also belong to. Amongst the supporting features are the resisting obstacles of mountains and rocks, of rivers and streams, of forests, trees, thickets and hedges, of ponds and lakes or of the weather; they all assure a closeness to nature, whether it be active or in contemplation. If then there is not too much distance-creating technical equipment pushing in between body and outer nature, our senses will show what it means if natural phenomena

get literally under our skin. In and on our own bodies, they demonstrate the significance of various and different action situations. There is, for example, the wind that roars, whispers, sweeps, rises or even dies, which is perceived especially through the physical sense of touch, but which we also, for example, perceive as sound when we roam through the woods, when it gives fir trees a soft voice, oak trees a deep rustling voice and birch trees a high whirring one. There is the breeze that dries the sweat after a passage of steep ascent and adds to the feeling of relief, the warm and humid zephyr, which brings violets and announces the arrival of spring time, the wind that kindles the campfire and thus speeds up the coffee making, the rising wind before a thunderstorm which makes it necessary to seek protection, headwind and tail wind which make our progress easier or impede it, the winds driven by or announcing an approaching storm, which make us lower the mainsail just in case, the wind as cloud pusher makes the sky look bright or dull and that way also partly determines the visual impression of the landscape, the wind that transforms a cornfield into a surging sea of waves, the wind that brings to us the cry of the crane and the scent of linden trees even before we see them, the wind that plays music as if on an aeolean harp on the branches of a tree which may sound at one time melancholic or at other times soothing. At the same time, all winds, as they howl, whistle, hiss, lisp and murmur, create atmospheres which make the hiker, canoeist or sailor who immerse themselves in them feel invigorated, challenged, frightened, soothed, inspired, alarmed, relaxed, etc.

Whoever can hear, feel and differentiate all this does not only enrich their own subjective ability of perception, but they also enrich the objective outside world whose enormous range of distinctive variety can now find clearer expression. Expression and impression enter into a mutually supportive relationship of increase. Whoever can use their senses in a distinctively nuanced way will discover a distinctively nuanced outside world, which, in turn, will have a further nuancing effect on the use of the senses.

There is very little consolation in these Bildungs opportunities. They may just describe an outdated model of a human being and of nature that is about to expire and that will cease to exist at all in its present condition if the digitalisation processes continue at the present speed. If human beings change in such a way, a different kind of pedagogy is also required. Will there be a Digital Outdoor Ed. in the way that there is already the Digital Humanities? We would, in any case, have to re-define ourselves. In order not to share the fate of Icarus, we would have to find a new measure, we would have to decide how we want to live. I think that we are right in the middle of this process. The increasing digitalisation is forcing us to answer the questions of "Who are we?" and "How do we want to live?" also in the outdoors.

Instead of giving an answer I follow Adorno, who opened up an opportunity at the end of a lecture by saying: I leave it to you to continue this line of thought.

Translated by Gudrun Vill-Debney

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Outdoor Technologies: ancient and modern

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For the purposes of this paper, I understand a technology to be a material tool with which people enhance or manipulate their environment and their relationship with their environment. This includes tools, clothes, fire, shelters, containers, boats, jewellery and weapons, examples of some of humans' earliest technologies. To stimulate my thinking, I watched people on a beach to see what technologies they used. They included a ball, a fishing rod and a camera; tools for play, sport and documentation respectively. Just these three objects make it clear how diverse our technologies are and to what diverse ends they are put.

The technologies people use to interact with nature can be very creative and sophisticated. For example, the artificial structures in the gardens by the bay of Singapore (Figure 1) that collect light for energy and rain for watering are shaped like trees and covered in climbers and epiphytes so that they have become an urban structure bringing nature into the city at the same time as reducing the impact of people on nature through sustainable technology. I'll return to the technologies of urban planners and their potential for 'bringing nature to people' again.

Figure 1: The artificial trees of Singapore

Manufacturing and applying technologies.

It is important to note how apparently simple technologies, such as a canoe paddle, are also creative and sophisticated, both in their manufacture and their application. The ability to work with our hands to make tools from wood was the central pedagogy of the Sloyd movement from Sweden (Noe, no date). The practice was embedded in the school curriculum and was considered to have a significant impact on brain development through the interaction of the body with the tool and the materials. Students of mine recently explored the Educational Sloyd movement challenging themselves to make canoe paddles. The process of manufacture of a technology is as potentially valuable pedagogically as the implementation of the technology itself.

Applying a tool such as a canoe paddle, developing the skill and, through its use, an intimate, embodied and visceral understanding of water is also highly valued by Outdoor Educators. However, it is probably what the application of the tool allows as it is used to create a journey and the meaning that is given to the experience by the paddlers and the society in which they live that is often given the highest educational value.

A diversity of outdoor technologies.

When the EOE Slovenia delegates were asked what their favourite outdoor technologies were, it produced this word cloud (Figure 2). As might be expected, delegates identified a vast range of technologies used for diverse purposes in a field as culturally varied and as rich in activities as the outdoors. It also highlights the degree to which outdoor life is actually engaged with technologies, albeit of a certain kind, when the field often claims to be a means of escaping from the modern, technological life. More appropriately, the word cloud suggests that the claim might be that the field values most highly traditional technologies that rely on our embodied energy for their application, perhaps enhanced, in many cases, by modern materials. The only items in figure 1 that have an alternative power source are a torch, a lantern that would need a candle and a mobile phone.

Figure 2: The favourite outdoor technologies of delegates at EOESlovenia18.

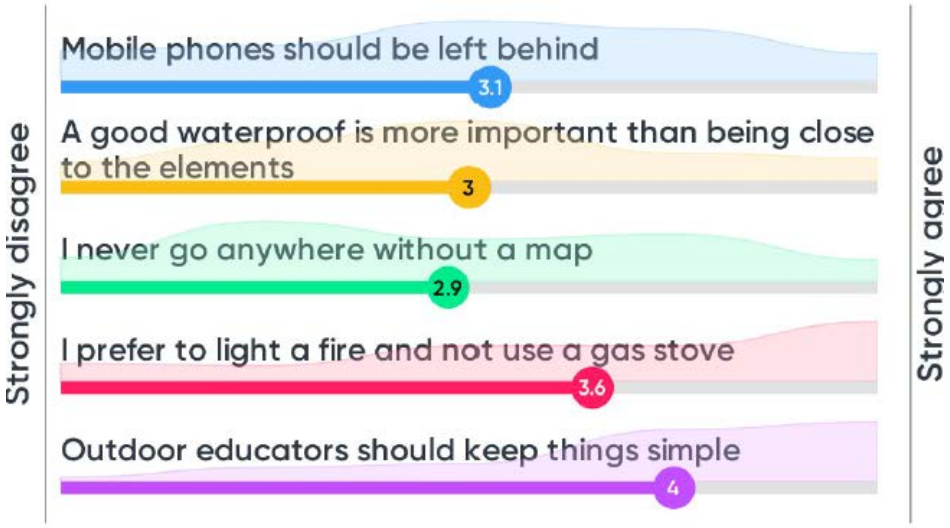
A yacht, my own favourite outdoor technology, and like a backpack, skis or a canoe, provides the opportunity to broaden horizons both literally, in the sense of where I can go, and metaphorically in what I can do and how I perceive myself, my identity or occupation as someone who can do this and go there. Another function of outdoor technologies is less well represented in the word cloud. A climbing rope or a life boat, both valuable technologies for some outdoor people, provide the security to protect, save or extend lives, literally as well as metaphorically, our 'safety ropes'.

The technologies of huts, tents and boats provide outdoor people with a home in nature, often a mobile home that allows people to make journeys or to live for extended periods in hostile or remote settings. Other technologies support outdoor living, cooking, sleeping, navigating and so on. The technologies or the many outdoor activities allow participants to explore the world they are in by encouraging travel in unfamiliar settings and employing complex skills, bikes, canoes and climbing ropes for example. Scientific equipment such as the simple geologist's hammer, allow people to see and understand the natural world and aesthetic equipment allows people to capture and share the places they go and the things they find. Some technologies promote self-discovery, exploring ourselves through experiences in the world, and some encourage people to explore human relations, shared tents or double canoes for example. Outdoor life often privileges the use of traditional technologies, an approach that is currently rising in popularity through movements such as Bushcraft and Forest Schools and their use of simple tools, shelters and fire.

The pedagogy of outdoor technologies

Outdoor technologies can be explored through a number of themes. As mentioned above, the outdoor life can be an escape from a technologically extravagant world to a simpler one. At the same time, certain technologies support the escape into simpler, more natural and machine free settings. The EOE delegates would seem to support this view (figure 3).

Figure 3: Attitudes to technologies in the outdoors EOESlovenia18.



Outdoor technologies challenging or reproducing societal norms.

Whether these approaches are understood as extending or restricting, extreme or minimalist, the they can all become counter-culture, challenging the norms of modern life and the values we hold towards the environment and each other. In these ways, even simple technologies can transform our sense of the world, our understanding of ourselves and of ourselves in that world. On the other hand, technology allows urban planners to bring the experiences of the outdoors to urban life with artificial ski slopes, climbing walls, challenge courses and white-water descents. 'Bringing nature to people' can be understood as an important step in providing access for all. However, it can also be a step away from enhancing the connection of people to nature rather than the thrills they can have while they are in it.

Technologies as symbols.

Often, outdoor technologies are transferred from everyday use into recreational life and from one culture to another. The kayak, developed by indigenous people in many parts of the world for their everyday lives, has crossed into cultures worldwide as an outdoor recreation and sport. Sometimes, the technologies that cross over retain some of the symbolism attached to their previous use, they continue to stand for something from their previous context. The kayak can be a symbol of the perceived simplicity of an indigenous way of life and its closeness to nature. Another example might be the tents, carts, uniforms and other technologies of the army in the Bohr War that came to represent the values of the Scout Movement under the leadership of Colonel Baden-Powell. Values, such as community living and self-reliance that Baden-Powell valued in the scouts he led in the war, are enabled and represented by the equipment brought into the service of the activities and way of life of Scouting.

Digital technologies.

So far, this paper has not touched on digital technologies. This has been intentional so as to remind delegates of the outdoor field's long engagement with a diversity of technologies and to explore some of our preferences and values around how they are employed in our work. The camera has long been used to document, express and share outdoor experiences with others on return to home. Telling the outdoor stories to ourselves and to others is an important part of the Outdoor Education pedagogy. Digital cameras make this more accessible and resilient micro-cameras take this even further. Mobile phones and the apps and networks they access allow for the sharing of experiences in real time or very soon after. In addition, these devises allow people to collect, share and analyse data, receive interpretive information about their locations and express their responses to experiences in new and creative ways. They allow a person who is away in the outdoors to remain connected socially in ways that were not previously possible. How these new possibilities are settling in to the wider ethic of outdoor technologies was be a central theme of this conference.

Social justice and outdoor technologies.

As hinted at above, politics is intimately tied up with the use of technologies in the outdoors. Adapted equipment can enable the participation of those otherwise excluded from outdoor experiences. On the other hand, the cost and skills needed to use a technology can be exclusive. The choice of technologies can put the power to direct an experience in the hands of young people or it can withhold it in the grip of the adult leader. The design of technologies can drive people apart or bring them together. They can provide a symbol of an emerging identity in a person who is acquiring confidence and self-expression or they can symbolise false pride and arrogance.

Environmental justice and outdoor technologies.

Nor is the outdoor field immune to environmental concerns caused by our modern consumption patterns. Travel and outdoor technologies are potentially implicated in the growing concern for over-consumption and the impacts this can have on pollution, biodiversity loss and climate change as every walk of life. Technologies can have significant carbon footprints or they can be sustainably sourced or even manufactured by participants in situ. They can be discarded after a single use or last a lifetime. They are a tool for good or ill and a powerful tool with which Outdoor Educators' can shape their pedagogies and express their values as they accompany their young participants into the world.

Integrating the ancient and the modern.

In exploring outdoor education projects that have considered carefully their use of both traditional and modern technologies, I came across the example of the Green School in Bali (Figure 4). The building, the furniture and the equipment are embedded in the curriculum and pedagogy of a school that aims to provide a whole education for sustainability by practicing what it preaches. In achieving this the school has used a mix of carefully considered old and new technologies, handmade and digital, involving both the making and the using of things to better understand a way to find a sustainable place in the world. Perhaps this is one case study that can help the Outdoor Education field continue its exploration of the appropriate use of technologies in our work.

Figure 4: The Green School, Bali

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Useful links

Forest Schools Education: http://www.forestschoolsuk.co.uk

Bushcraft Education: http://www.bushcrafteducation.co.uk

Making a canoe paddle: http://www.songofthepaddle.co.uk/forum/showthread.php/366-The-Idiots-Guide-to-Paddle-Making

Singapore Gardens by the Bay: https://en.wikipedia.org/wiki/Gardens_by_the_Bay

The Green School, Bali: https://www.youtube.com/watch?v=biVwnTAxZXY

Place Based Outdoor Education PBOE

The place and the moment, the soul and the stories.

Ævar Aðalsteinsson, Iceland
The Centre for Outdoor Education in Reykjavik

Time never stops

We are in the present and studying the past. Thinking about the future. We are here today wherever you are and ones upon a time it was people who live here.

Place based outdoor education PBOE is a learning that is rooted in the stories of what is local; the unique history, environment, culture, economy, literature, and art of a particular place. The students become a part of the community, rather than a passive observer of it.

Way I am here but not in some other place or somewhere else?

Kenya, China, USA, Greenland, Slovenia, my home villages Mosfellsbær

In PBOE we like to learn about the place where we exist. The story, developing and people destiny.

The development and change of our environment and surroundings; nature, daily life and ourselves are often not quite clear, but will appear if you look closer.

Place Based Outdoor Education (PBOE) refers to these elements and can be used in diverse, instructive and fun ways of learning in school and leisure.

Do we always have time to get to know what is in the neighbourhood?

How do we do in PBOE – interactive teaching and instruction?

In PBOE we want to learn about the place where we exist. The story, development of nature, the environment and surroundings and people's destiny

The church of St. Peter Italy and a small chapel in Iceland

The same thing don't have to mean the same thing. Ex. Church. Everything has a different story we look closer.

Methods:

Formal education
Informal education
Adventure education

Teacher give instruction and starting the process or scenario.
Creativity work with the students and students educate others.
The students experience and participate.

Take a look at the surroundings. The history and hardworking live the people who lives here. Outdoor Education can be very diverse. We shall work on the curriculum. Use the neighbourhood and the teacher is very important. We can have different subject.

All places have a story.



Lewis (1980) and Knutson (1995) have described how people learn with the senses and how we can use it on many ways. Also from knowledge and learning of PBEO method.

Active learning when you discover and detect and use your senses

Hearing 10%

Reading 30%

Seeing 50%

To do, act 90%



In PBOE we like to do things and learn through personal experiences.

Method and approach in PBOE

Geology/volcano/mountain – walk/climb mountain

Sea/Water – sailing/boat trip/fishing/seashore

Sustainability/pollution/global warming – the highland/glacier/go to forest/seashore

Story telling

Graphical and figurative way

Dramatic account has a positive effect and impression



PBOE course in Iceland – yes!

In August 2018 a teacher and student exchange course was held in Reykjavík, Iceland, concentrating on Place Based Outdoor Education. This was an international cooperation between the University of Iceland and Marion University in Plymouth, UK, initiated through the EOE Network.

It is very important for Iceland where we are taken the first step in OE to get an international contact with other countries.

The theme of this course was the sea - fishing and working at sea. It focused on the environment and surroundings of the seashore but also what PBOE exactly is and how it can be useful when we learn about the sea.



In this course, the local community provides the context for learning; an experiential approach used with the perspective of "sailing, seashore and our maritime heritage".

The course is intended to develop curiosity; about people, places and questions.



A pedagogy of place in outdoor education allows us to discover and inhabit the world in a manner that acknowledges the historical roots and cultural connections to the stories of our people. As such this

The advertisement or the course send out in January 2018

On successful completion of the module, students will be able to:

Knowledge

- demonstrate research skills that explore the 'place' where adventure activities are undertaken

Skills

- analyse the affect that 'place' significance has on participation in adventurous activity
- demonstrate active participation in adventurous activities related to the exploration of 'place'

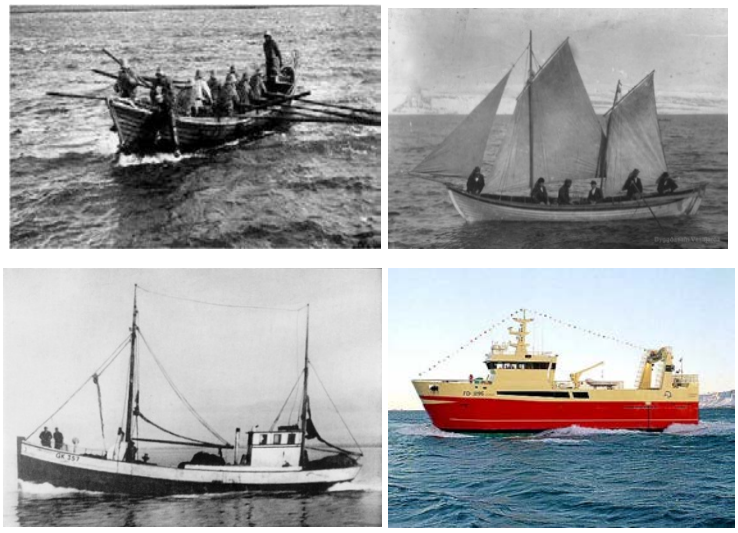
Competences

- demonstrate comprehensive independent study skills that allow engagement with the research and exploration of historical evidence and academic literature

Teacher: Jakob F. Þorsteinsson, University of Iceland, Mark Leather and Fiona Nicholls, Marion University in Plymoth, England
Time: 8. – 15. August 2018 – 6 days; 9.00 – 17.00 in Reykjavik
1 paper – article based on PBOE matters (3.500 word)
1 paper – article based on personal reflect and experience


The ideology of the course

Student work focuses on the community; the stories, culture and interests, and community members will, with educators from the university, serve as resources and partners in the teaching and the learning process.



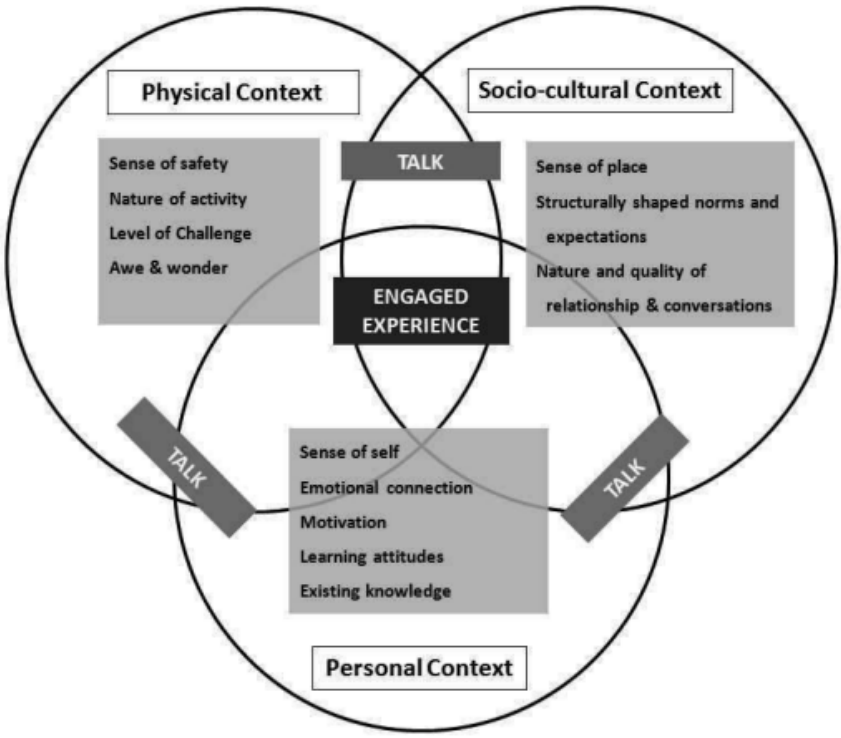
Mark Leather 2018:

Place-based education might be characterized as the pedagogy of community, the reintegration of the individual into her homeground and the restoration of the essential links between a person and her place. Place-based education challenges the meaning of education by asking seemingly simple questions: Where am I? What is the nature of this place? What sustains this community? It often employs a process of re-storying, whereby students are asked to respond creatively to stories of their homeground so that, in time, they are able to position themselves, imaginatively and actually, within the continuum of nature and culture in that place.

They become a part of the community, rather than a passive observer of it.

Houses and village in Iceland history.

Personal Context



Field trip in safety surroundings

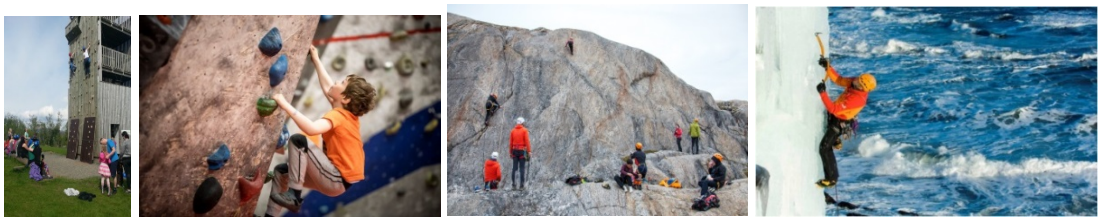
Outside of my Comfort Zone
To move forward
Ideographic development
Adventure education
Security and confidence

Skydiving and sailing on a sailboat – different activity
New experience gives you a personal development
Move out of your Comfort Zone. You can only grow if you are willing to feel awkward and uncomfortable when you try something new.
What seeks your attention? Try it in small steps.

Sailboat courses for young children and young people

Pedagogy of risk

Consequently, children and young people may be intentionally pushed 'out of their Comfort Zone' by well-meaning outdoor adventure (OA) educators in the belief that this will not only result in personal growth and learning but that these benefits will be transferable to experiences later in that child or young adults life



Life begins at the end of your Comfort Zone

Fiona - Outside of my Comfort Zone: Challenging the 'Comfort Zone Model' Fiona Nicholls 2018.

My diary







Day one

What is PBOE?

- The story of the place, the people who live there, development of the environment, nature and surroundings
- Interactive teaching
- eye-opener, experience and emotion

Personal connection to the see

- Picture from Arnarstapi harbour – my favourite place
- Polished stone from the seashore where may grand-father went out to fishing on a small boat


Went out for sailing

- Terrifying sailing on a small sailboat.
- Pretty big waves and 6-8 m/sek
- storm for me who is not a sailor

Day two

Sailing on an open sailboat across the Skerjafjörður. Wind was low from north-east. One captain and three sailors on each boat. Landing at Bessastaðir, an old farm, school and now a residence and home of the Icelandic president. I was sitting under a wall of the old church , build in 1773. 245 years ago. One of the oldest house in Iceland. Back on water and now we

had to sail against the wind. How will that be? Great view from my boat, around Reykjavík, and I was not on a high mountain!



Day three

Early morning meeting. Strategy and discussion about our sailing today. Weather is cloudy and low wind from east 4m/sek. We will sail longer distance today. All the way to Seltjarnarnes on a deep water. I was working on the foresail. Landing in a small harbour after our voyage and a new experience**.**





Visiting Maritime Museum. Presentation and task from the exhibition. Many stories of terrible accident at sea in Icelandic water around the island. Security and safety did not exist in a very long time.

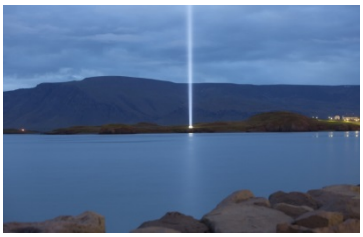

Pelagus accidents in 21. January 1982.

I told a brave story about accidents in 1901. British trollar came up at south coast of Iceland. All vas dead except one sailor who could swim.

Day four

I'm on an island. Viðey was ones upon a time the most important place in Iceland, when Viðey was the head of state. A Place Based guide told us many things, stories and facts about the island.

The Imagine Peace Tower – Friðarsúlan, is a memorial to John Lennon from his widow, Yoko Ono, located on Viðey. The light is on fron his birth 9.okt – 8.des. when he was killed 1980, aged 40.




In Viðey is an old village. There was a big fishing industry around year 1930. It was called „the million company" It go bankrupt and Viðey was abandoned in 1943. Nobody lives there anymore. Solo – 30 min. alone on the island, thinking and reflect and consider the environment and surroundings

Fisherman's games – riddle and mind games when it was a bad weather

Day five

Visit Árnastofnun - The old Icelandic's books tell us about expedition and voyage across the north Atlantic ocean. On the Viking ages you will sail from Norway to Iceland on three days and three nights in a good fair wind.


Look at the environs - Near our harbour in Nauthólsvik is a small hill calld Öskjuhlíð. When the British army occulated Iceland and build up a new airport in Reykjavik they had to defend oneself against the German army. You will find many evidence from that time on this hill.

Day six

The coast guard ship Óðinn is now a museum. This ship is a witness about hard and rugged weather around Iceland. But also for the codwar against the British Royal Army. The ship looks like the captain had just leave the boat.

Ocean Cluster is a specific house in the harbour of Reykjavik. The Ocean Cluster likes to be a driving force for the company who work in the fishing Industry in Iceland. In an interesting and pleasant facilities they invite fishing Industry company to work and live in that house and in good connection to other companies.

Top 3 in PBOE - my opinion

In PBOE we want to learn about the place where we exist.

The story, development of nature, the environment, surroundings and people's destiny.

The students become a part of the community, rather than being a passive observer.

PBOE is like crossroads many ways to learn**.**

Author

Ævar Aðalsteinsson is MA program student, University of Iceland, Project manager in Outdoor Education

Art and Civic Education in Biodiversity

Vicente Blanco, Salvador Cidrás and Ananda Casanova

Santiago de Compostela University, Spain

In this presentation we will discuss some contributions of aesthetic approaches to a civic education in biodiversity. We will examine workshops carried out with children from preschool and primary school in Lugo, Spain, which were based in artistic processes where participants learn through direct experience, as argued by John Dewey, and engage with local landscapes and their multiple dimensions. First, we will briefly introduce the concept of biodiversity and the educational challenge of addressing it in the face of the complex scenarios of our times. Then, we will argue for an aesthetic education as a tool that contributes to empower individuals and communities and finally, we will describe the workshops.

Biodiversity and education

Biodiversity, or biological diversity, is the variety of life in our planet, encompassing all livings beings and the diversity within species, between species and of ecosystems[2]. It does not imply a mere catalogue of organisms, but rather considers relationships and interactions amongst them, their habitats, the ecosystems to which they belong and their biomes (UNESCO, 2017). Interconnectedness is an aspect that turns it into a concept that is simple but at the same time challenging to understand, as we human beings often do not understand ourselves as an integral part of biological diversity, or acknowledge the vital role it plays in sustaining our shared life support system, in our mental and physical well-being, and in the development of human culture.

The last decades of the 20th century have put biodiversity loss on the spotlight of international concerns, as we reached alarming statistics of species extinction throughout the world, implying a dangerous threatening to ecosystems' balance and to life itself as we know it, both biologically and culturally. Human action have being so damaging that our current historical period has been described as the Anthropocene, a new geological era that recognises that our collective activities have considerably altered Earth's surface and natural cycles (Rafferty, n.d.). Nevertheless, more than simply denouncing the consequences of human presence on the planet, the Anthropocene warns about the effects of capitalism and its most current manifestation, neoliberalism. Our consumerist patterns and dependence on fossil fuels are some of the negative characteristics of our current economic model, not only environmentally

[2] International Convention on Biological Diversity, Article 2 (United Nations, 1992).

speaking. The social exploitation and practices of neo-colonialism implied in the capitalist ethos are also a threat to biological and cultural diversity.

This means that is not possible to address biodiversity ignoring the political, social and economical aspects that put society on this spot in the first place. A purely biological approach to biodiversity would be ineffective to cope with the complexity of our world. At the same time, we have the opportunity to radically re-imagine what does it mean to be human and to change our patterns of behaviour, as human species, in this world that we inherit and inhabit together with other species. Celebrating cultural diversity is as urgent as protecting "the environment", precisely because the separatist idea of "us" and "them" - other people, country or nature - only add more issues to the problem. Biological and cultural diversity are intimately related to sustainable development, considering that the variety of cultures, values, beliefs, knowledge systems and worldviews contributes to sustaining and creating biological diversity. If societal traditions and values shape the way we relate to the world, re-examining our ethics is crucial to better understand and regenerate these relationships (UNESCO, n.d.).

From this perspective, a civic education in biodiversity help us to assess the importance of biodiversity, understood as the result of a natural process that has the right to continue its existence, as a guarantor of well-being and balance in the biosphere and its contribution to the development of human culture. Drawing on the contributions of Dewey (2004), we understand that the main role of education in any society is to help children to develop a set of values aligned with a democratic spirit, through a process where they build up awareness about the communities they belong to and to which they contribute. In this sense, we need educational practices that take local landscapes, cultures, people, fauna and flora as cornerstones of our pedagogical intentions, making use of an ecological approach that reveals the interdependence of these relationships, both at the local and the global level. We believe that these processes can greatly benefit from the contributions of art, through an aesthetic education that understand the subjective experience as fundamental to promote effective changes on the collective sphere.

A civic education in biodiversity through aesthetic education

Based on contemporary artistic practices such as Artistic Activism or Activist Art, art is a dynamic practice that empowers individuals and communities to bring social change. "Artistic Activism mobilizes affect and effect" (C4AA, 2018). From this point of view, we understand art as an act of resistance against dogmas and single narratives. The single narrative of our time, neoliberalism, objectifies nature (and people) as something to be exploited at the service of individualists understandings of the world. Art can help us to build other narratives about belonging, taking care, responsibility, collective and individual memory, etc.

The exercise of artistic creation is an important tool for the development of creativity, which in turn has a social dimension worth to consider in an outdoor praxis concerned with art, citizenship and sustainability. According to the artist Bruno Munari (1977), creative people are individuals who contribute to the community in the first place, since they are open to

collaboration and innovation. Developing aesthetic sense helps individuals to value in depth their environments, to observe and act within the diversity of qualities present in these places.

The workshops took place in Galician landscapes, addressing local fauna and flora, interdependence and traditional culture by using artistic materials and different techniques. We invited participants to be artists and scientists who were investigating the place, its physical features, relationships amongst species and materials. We observed children engaged actively in the activities by using the materials to create their own interpretation of those places. Considering the challenges in formal education, in times when expression and creativity are losing space in the curriculum, we believe sharing these practices might endorse the importance of art in projects for biodiversity conservation."

Workshops

BAGS OF NATURE

During a walk in the forest, children spontaneously picked up leaves, branches and other objects from the ground that caught their attention. Since their pockets and hands were already full of materials, the need for an object to transport them arose. Together we decided to make a bag to carry and store the elements, which we called "Bag of Nature" and, after we used them, put back in nature what we had collected.

THE FLAG OF THE COSMOS

This project was inspired by the works of the artists Lygia Pape and Cesar Manrique. To celebrate a sense of belonging to nature, we painted our flag of the cosmos on a cotton canvas, using our experience in the woods as a reference. Animals, plants, landscape, and rain mingled into a colorful composition. Later, the flag was used to present ourselves as an activist unit. We cut small circular holes in the fabric, so the children could introduce their body and be part of it. All together, they began to walk, taking care that the younger kids followed the

step of the older ones. They started singing to introduce themselves to the people they met on the way: "We are here, we are nature and we want to share it with you."

THE CABIN IN THE WOODS

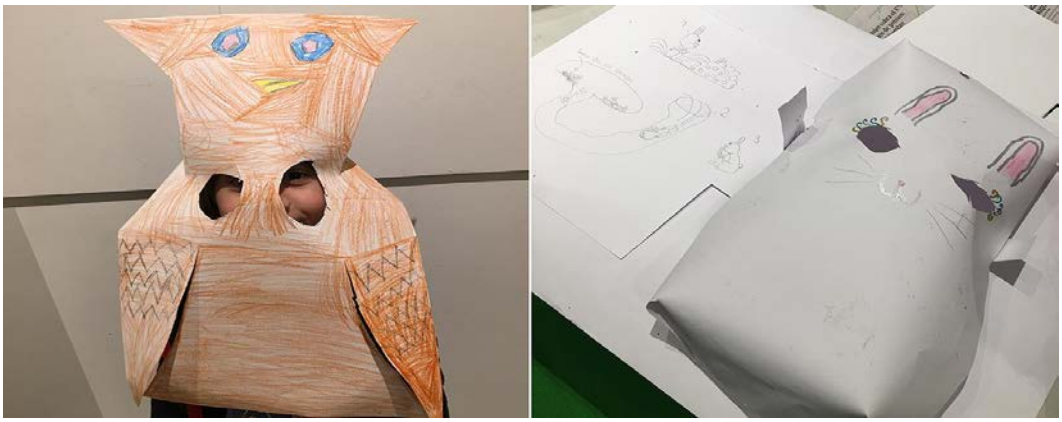
The "Flag of the Cosmos" was a versatile element to use as a cover of the cabin we had built. Earlier in the workshop we made models with sticks collected in the woods, testing possible structures, connections, resistance, etc. Then, using longer sticks, we reproduced the exercise constructing a cabin. Once completed, the satisfaction of building something useful for everyone was evident and the cabin became a refuge, a common space to share games and food, and to rest.

BIOSBARDOS:

In this activity we wanted to bring aspects of the traditional Galician culture. In this case, we introduced the *biosbardos*, fantastic beings that inhabit the forest and give luck to those who find them, as long as the person promises to never reveals their appearance to anyone. Exploring the idea of representing a creature that nobody really knows how it looks like, the children began to work with mud and natural elements and imagine different form to their creations. We continued painting and drawing the clay forms to finally make an exhibition with all the ideas projected.

NATIVE ANIMALS

In order to get to know and care for the animals of the Galician fauna, we proposed to share some of the animals that inhabit our forests. It was evident the children's lack of knowledge of their closest natural environment. After sharing a list of animals, the kids chose one animal and created a dramatization of it. Then, using paper and staples in a very easy way, they made the animal's mask and draw hypothesis of how these animals lived: what they ate, how their shelters were like, how they moved, etc.



PERFORMATIVE DRAWING 1: Moving Like Nature

In this proposal we worked nature's movement through performance. The children shared their hypothesis about how different animals and trees in the forest moved, and represented them with their bodies. Subsequently, these movements were transferred to paper, drawing with charcoal. The canvases that we used for the drawing were white banners that we installed among the trees of the forest.

PERFORMATIVE DRAWING 2: A line Made by Walking

Taking as reference the work of the artist Richard Long, *A line Made by Walking* (1967), we worked on the idea of drawing as a mark, as a trace of our passage through the world. The line of Richard Long was made by the author's walk back and forth until the footmark was visible in the grass. With that idea in mind, we marked a route with a rope on which the children walked or ran, simulating the movement of the animals of the forest. Then, we observed the mark left behind by our own movements.

THE TREE

This project was inspired by Bruno Munari's proposal "El albero" (The Tree). Using a very simple object, a blank sheet of paper, the children started building a tree with a large central trunk and its ramifications. Later, using colored inks, they drew the biodiversity found in the trees: animals, insects, plants, fungi, etc. Some elements were real and others imagined. Finally, as a gift to nature, we raised the tree at the entrance of the forest.

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Authors

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Blurring Boundaries: Connecting with the Outdoors through the Senses

Creative Aesthetic Technologies: Narrative/ Aesthetic Research

Di Collins and Barbara Humberstone
Journeying Gently, Buckinghamshire New University, United Kingdom

Context

We are narrative researchers in the field of outdoor learning. Identifying ways of capturing the totality of an experience can be illusive. What is it that makes one experience distinct from another or special? It seems so much more than the essence of a place or activity. It includes embodiment and making sense of sensorial experiences, experiences that are shaped by the body; atmospheres and dreams and memories; connections, whether they are physical, aesthetic, cultural or social; and a conscious or sub-conscious awareness of the associated feelings and emotion. The totality of an experience is complicated. The interactions between these elements and other aspects of an experience may occur in a range of 'arenas'. Our focus is the experiences of older outdoor people. Chris Bonnington (2017, p.5) has described the phenomena of being an older person " …. this business of getting older … is a bit of a pig. You're stiffer and you're slower; you can't quite achieve what you did before". He concludes, "I found myself handing over the lead more frequently …. and needing a good tight rope on some of their harder leads. It didn't worry me. I simply loved being there, loved their company and revelled in the glorious unspoilt freedom of the mountains." (ibid 2017, p.385) Using narrative research processes, we investigate how older people connect with the outdoors, the more-than-human. Our main focus is on two investigations. In the first, we use entries from our personal journals to record embodiment and senses in poetic narrative. In the second, email narratives emerge into poetic narrative.

Our research process

For this paper, we have moved away from more traditional ideas of technologies as being concerned with computer 'apps' and grand arrays of electronic equipment. Here, we offer an alternative definition of creative aesthetic technologies (CAT), identify creative analytical processes (CAP) and explore a conceptual framework, which denotes the 'blurring of boundaries'. For the purposes of this paper, our understanding of CAT is that they are concerned with using the imagination and/or original ideas (Hanks, 1984, p. 262); are related to pure beauty (ibid, p. 17); and involve the application of practical or mechanical processes (ibid, p. 1201) to create something, solve problems, and develop practical solutions to problems. In Diagram 1, we illustrate some of the possible CATs, ranging from painting and

sketching through writing to movement, such as balance.

Diagram I.

These creative aesthetic technologies then evolve into processes as cognitive, social and sensory reflective and analytical research practices are applied to them, as shown in Diagram 2.

Diagram 2.

Burnier (2006) and Ellis (2004) argue for both analytical and artistic forms of narrative research. Creative analytical process (CAP) is a term created by Richardson (2000) to allow for research that is both creative and analytical. lisahunter and emerald (2016) have suggested that a way of immersing oneself with narrative research process involves engagement with embodiment, the senses, sensory, place and space. Their framework usefully and insightfully brings together, yet discriminates, dimensions of research 'seeking the senses' in place. As lisahunter and emerald elucidate, it is problematic to use language to create text, in order to represent an event experienced through the senses. Thus, we chose to include our own personal narratives, with the intention of giving clear, evocative examples of the complexities

inherent in this research. We also include a short piece of narrative poetry developed from comments made from those who took part in the email 'conversations'.

Narratives

Barbara

My engagement with windsurfing goes back a long way and the place I regularly sail is on the South coast:

> I am a committed recreational windsurfer for over 28 years (I learnt to windsurf on a board with a removable wooden dagger board and a bamboo boom- *now over 33 years ago*) and an ethnographer for most of that time. I cannot but take an ethnographic or more particularly an auto-ethnographic approach to explore embodiment, location and nature. The main place I windsurf and where I conduct this research is relatively safe… and a very accessible location at the mouth of Southampton water. Here, there is access to the water on three sides of a kilometre long shingle and earth spit, on which there was once a centre, which housed sea planes during the 40s and 50s, and now is a thriving outdoor activities centre (Humberstone, 2011, p. 163).

The story then uses a form of narrative to express the embodied pleasure through the senses of one particular windsurfing occasion:

> I feel the water rushing past my feet and legs. The wind in my hair. I sense the wind shifts in strength and direction and move my body in anticipation to the wind and the waves. I feel the power of the wind and the ability of my body to work with the wind and the waves. The delight and sensation when surfing down a small wave with the sail beautifully balanced by the wind. Seeing the sea birds and the fish jump delight further. The smell of salt and mud (Humberstone, 2011, p. 164).

This narrative explores embodied physical activity in nature and the way in which sight, sound, touch, smell and balance create the pleasure of my whole bodily experience as an older woman. It is important to note that the pleasure in my case is due to skills developed over many years and points to the importance of 'learning to be in the body' or positive, enjoyable experiences of physical activity through pleasurable experiences in physical activity from an early age.

Windsurfing has been theorised as a counter-cultural activity or 'life-style' sport (Wheaton & Beal, 2003). It started in the late 1970s, which coincided with the 'baby boomers' in the West reaching young adulthood. Many of the older people who are windsurfing now started windsurfing in the 1980s and have continued throughout their lives, continuing to practise this activity enthusiastically. Many older windsurfers travel with a caravan or motorhome to

venues to windsurf, frequently touring on windsurfers for example around Poole harbour. They maintain a youthful eagerness to windsurf whenever possible, when the wind blows. Nevertheless not only does windsurfer and gear become one as they sail: "Paying attention to space-time re-imaginings (Foucault, 1986) and Haraway's (1985) classic 'cyborg manifesto', I argue that as one windsurfs, surfs or sails one becomes sea-cyborg/mermaid-merman, connecting empathetically with elemental seascapes. In exploring the cyborg concept, the blurring of boundaries between human and non-human are explored." (Humberstone, 2019: 184). This interconnection of technologies with bodies can become more so as one ages and becomes less strong or draws additionally on artificial material aids such as knee supports and artificial joints. Thus technologies can dissolve the boundary between us as humans and more-than-human sea (land) and its energies.

Di

In "Fields of Dreams: Ageing and Changing Perspectives", I struggled to find the words to express the myriad of sensations that were pulsating through my brain and body at this time. Yet, as I re-read my journal the sensory and sensational responses are as strong and pertinent as ever.

> I sped towards the receding tide simply for the joy of feeling the salt-filled air soaking deep into my lungs. I could feel the energy pushing down through my thigh muscles and exploding through my feet, as I leapt over rock pools and avoided the seaweed. My arms flailed like the sails on a windmill. I was running with all the exuberance of being fit and in touch with the nature. I was part of the environment. My sub-conscious had let go of rational thought. I stretched. A deepening sense of reality surfaced. My knees were still painful. (Collins, *In Progress*.)

Similarly, a visual memory of a dream I had as a lay in my tent at Stok Kangri advanced base camp, Ladakh, continues to be as vivid as it was at the time, over twenty years ago. As I lay in my sleeping bag, a flight of multi-coloured plastic scissors snipped at the atmosphere overhead. Even now, some twenty years later, it still triggers the desire to pant for more highly oxygenated air. Over thirty five years ago, I sat and wept after I had pulled my canoe onto a small island off the coast of Vancouver, Canada. I was overcome by the sheer magnitude of being a part of the more-than-human and the energies of the ocean and the elements. On these occasions, was I blurring the boundaries between human and more-than-human and its energies, as discussed by Barbara (see above)?

Group

I, Di, now ponder whether collective narratives can have the same impact and encourage a blurring of the boundaries between human and more-than-human. The originators of the collective narrative, drawn from email conversations, commented that this represented their experiences, thoughts and feelings. They indicated feelings of ownership of the totality. The focus on their individual words had been superseded by this amalgamation:

Seizing the Day

Even on a bad day when the weather is against you
and you have to turn back from the objective
and you arrive back in the dark
soaked to the skin and frozen to the bone
there is a sense of achievement
We have seized the day

Tendrils of sea weed dancing in the current
Becoming wild, swimming
Following the sunlight
Following the moon beams dancing on the ripples
Silence, the openness, the fresh air, the green, the birds…..
Alone in nature…..watching the light cross the mountain, camera in hand

With injuries, wear and tear, pains, stiff joints
Talks of operations and changed abilities
Friendship is transformative
We reminisce
And as yesterday's Scottish winter ascent becomes today's watercolour trip to the Isle of Skye
We seize the day

It is for the originators of this collective narrative and the readers of the texts to make their personal judgments about the extent to which there is a blurring of boundaries.

Final comments

These narratives are very personal. Through reading and examining our narratives from our journals and our memories, the focus on the senses and sensual becomes clearer. The recordings of sights, sounds, silences and balance, alongside comments about the sensual responses to these stimuli and the 'merging' with the more-than-human, move us into a dimension deeper than the purely descriptive. Further development of these narratives through questioning and elicitation might lead to greater insights into the complexities of time, place and space, and the significance of 'epiphany' or 'gateway' moments. These complexities were perhaps more noticeable in the email narratives, as the respondents were asked to be focused and consider first highlights of historical moments in the outdoors and to then, second, to reflect on their current connections with the outdoors. Finally, they were asked to consider their affinity with their collective poetic narrative. The critical comment from lisahunter and emerald's framework (2016) is that we should trust the reader and trust the text. This moves narrative research from a stage where it can be finalized to a position

where it continues to have a dynamic and energy and may continue to evolve. As narrative researchers, we need to continue developing the creative aesthetic/analytical processes through creative aesthetic technologies. As outdoor educators we need to have the confidence and skills to give voice to the blurring of boundaries between the participant and the more-than-human, between bodies, technologies and the more-than-human.

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Aesthetics and nature connectedness

Geoff Cooper

"it is not half so important to know as to feel. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow". **Rachel Carson (1965)** ***The Sense of Wonder.***

Introduction

In the UK the most common definition of aesthetics relates to a sense of beauty gained through the arts or nature. Here it is used as a broader concept to encompass feelings, perceptions and understanding that arise from sensory and embodied experiences in the outdoors. In many European countries aesthetic approaches to learning are neglected or under-valued in formal education in pursuit of business models based on information, competition and a global testing culture (Smith, 2016). Cognitive knowledge is given precedence and education directed towards employability (Sterling, 2001). With tighter Government control over the national curriculum in the UK it is now more difficult for young people to have access to art, drama, dance and outdoor education as part of school life and the closure of many youth services means that these fields of learning are not always available through non-formal education.

But why are aesthetic approaches important?

Our society suffers from an entrenched world view which is based on rational thought and which dates back to the writings of Newton and Descartes in the seventeenth century. These state that knowledge and understanding are products of the analytical mind and quite separate from the rest of the body. This view has permeated all aspects of society and is clearly seen in our education's emphasis on factual knowledge-based learning. Ruskin's division into 'head', 'heart' and 'hand' and Bloom's similar taxonomy of 'cognitive', 'affective' and 'psychomotor' domains have served to reinforce this separation of how we experience and make sense of the world.

John Dewey and others have questioned this false division into mind and body and the French philosopher Merleau-Ponty in the 1940s developed the idea of the body as a site of perception, learning and knowledge. This chimes with many outdoor leaders who appreciate how movement can be a powerful influence on our senses, moods, perceptions and learning. It's common for people who enjoy walking, running, biking or gardening to comment on how their chosen physical outdoor activity often frees the mind, changes their mood, makes them creative and helps them sort out issues and problems.

We are emotional beings and aesthetics are essential in our personal development and our awareness of others and nature. These experiences can provide different ways of learning and may appeal to young people who struggle with traditional classroom learning. They can motivate, inspire and encourage creativity. Some people do not respond easily to group activities and aesthetic approaches may offer them opportunities to show untapped talents through quieter, individual experiences.

There is a complex interplay of emotions and thoughts from being and moving in the outdoors. Sensations arise from fresh air, the wind on our faces, the smell of the earth, birdsong, the sound of running water, our heartbeat, the movement of our bodies and the beauty of the landscape. Adventurous activities can further challenge us physically and mentally and lead us through a range of emotions. We become more responsive and make personal connections to nature which are enjoyable, memorable and reduce stress.

We live in a world where we are bombarded with information and there is constant pressure to absorb and process it. The digital age has brought many benefits but also brought stress through promoting competition, commercialisation and an emphasis on self-image. Time in nature frees us from the noise and pressures of everyday living. It allows us to slow down.

Ways of learning in the outdoors.

John Quay (2013) discusses two approaches to learning in outdoor education. The most common and accepted one recognises outdoor learning as an interaction between self, others and the environment (Dartington Amenity Research Trust, 1975, Mortlock, 1984). In this approach, meaning is gained through reflecting on causal links between these three elements. Success is measured through an awareness and understanding of self, others and the environment. He contrasts this approach with reference to Nicol's (2003) description of a group's experience in the Scottish Highlands and their emotional response. Quay explains that this is a more holistic approach based on Heideggar's notion of "being-in-the-world". This is a pure aesthetic experience, a feeling of oneness with the world that exists without calculation or analysis. I have argued (Cooper 1998) that through such powerful sensory experiences we can appreciate that we are part of and not apart from nature. They can open our minds and bodies and lead to curiosity and creativity and may change attitudes and behaviour.

Outdoor learning and Aesthetics.

Outdoor learning creates new situations for young people, away from the commonplace and the classroom. They are confronted with different sensations- sounds, smells, views- and changing relationships with peers and leaders. Christine Doddington (2014) remarks, "any observer accompanying a group of children as they move outside for activities, will be struck by the quickening and changes in stance, gesture and talk that anticipation of this move outside provokes". Their experiences may be challenging both mentally and physically. As a result, somaesthetic learning, through the senses and body, becomes a more significant part

of overall perception and understanding. This is a more holistic approach than indoor-based study where cognitive learning takes precedence.

Some outdoor educators have long appreciated the value of aesthetic approaches and have put forward more explicit methods to encourage sensory encounters. For example, sensory activities have been used for many years particularly in the United States where they were developed by Steve van Matre (1972) and the Institute of Earth Education as an essential element of their environmental education programmes. Similar activities are described by Joseph Cornell as integral to his concept of Flow Learning (1979, 1989). These have had a considerable impact on education and interpretation programmes devised by national parks, youth camps and wildlife organisations in the United States and Europe. Van Matre (1990) regards these sensory encounters as a means of connecting young people to nature and eventually engaging them in pro-environmental behaviour.

Nature Connectedness.

There is a growing interest in the importance of nature connectedness in the UK. This is seen as both beneficial to a person's well-being and also beneficial to nature conservation. Many writers have drawn attention to how our children are losing their connections with the natural world and the consequences of this (Kellert , 2002; Louv, 2005; Cooper, 2005; Charles and Wheeler 2012). According to a report from the Royal Society for the Protection of Birds in the UK, 4 out of 5 British children are not connected to nature (RSPB, 2013).This is confirmed by recent research (Hughes, Richardson, Lumber 2018). The UK Government's 25-Year Environment Plan (2018) highlights the importance of connecting people with the environment and many conservation organisations such as Natural England, Natural Resources Wales, the Wildlife Trusts and the National Trust are now addressing this agenda through their policies and practice.

Lumber, Richardson and Sheffield (2017) conducted two online surveys of 321 people and recorded the direct nature experiences of 72 students to determine pathways to connecting with nature. Their analysis concluded that there are 5 important pathways- Contact, Beauty, Meaning, Emotion and Compassion. This emphasized the significance of aesthetic approaches based on emotions, feelings and personal connections to nature. Information, identification and knowledge based activities were shown to be far less important. This holds no surprises if we relate it to many people's strong childhood memories of times they have enjoyed in natural settings. It's often the emotions that have been stirred that keep these memories strong- seeing an animal in the wild for the first time, watching a sunset or the milky way, looking down on the autumn mist in a valley, feeling the exhilaration of jumping in a lake or climbing a mountain, hearing a cuckoo in spring or seeing a murmuration of starlings. These are occasions which affect our bodies, senses and emotions.

Beyond Nature Connectedness

There is now considerable research which demonstrates the beneficial health and well-being effects of enjoying and developing personal connections with nature. Research considering how nature connectedness may lead to engagement in conservation and environmental actions appears less conclusive. According to Mayer and Frantz (2004) there is a strong argument that feeling connected to nature and caring about nature is a fundamental key to people adopting positive environmental and ecological behaviours. They believe people must care about something if they want to help save it. Although this is a common belief amongst environmental educators it is difficult to demonstrate a causal relationship between nature connectedness and environmental action. Studies show that there is a gap between people's environmental intentions and their actions. This is a research area in need of further investigation.

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Finnish Outdoor Learning Didactics and New Technology - more than a sum of parts

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This presentation discusses how digital technological and pedagogical rationales of Outdoor adventure-based education and Experiential learning can be integrated into Finland's formal education. The focus of using technological applications, techniques and methods depend on the teacher's skills, pedagogical intentions and purposiveness, which are always oriented towards something considered meaningful in the pedagogical process. Unfortunately, there is only a modest scale or research evidence trajectory of using technology in the experiential learning in the outdoors, even though the need for evidence-based innovations and measures relating wellbeing or rehabilitation would be welcome. However, technology is well used in documentation and in reflective meaning in formal schools. How can a teacher or an educator support the "Learning triangle" between students – content relationship by technological applications? Can we find a sensible use for technology as an additional tool that has positive benefits for the adolescents and the "new generation"? The essay is based on my doctoral thesis research (2005, 2012) and on the post-graduate findings in the teacher as researcher practice during the years 2008-2018. The purpose of the article is to enlarge understanding the education-learning process in the Outdoors and Nature. For educators, instructors and teachers and those who plan the goals and activities in the Outdoor setting the "Learning triangle" is a theoretical design to figure out the multidimensional pedagogic and didactic processes with sensible technological approaches in formal education practice.

Keywords: Learning Triangle, Didactic approach, Outdoor education and Experiential Learning, Sensible technological tools, Photo documentation, Finland National Basic education Curriculum

Introduction

In this presentation, the Outdoor adventure-based Education refers to pedagogical practice in strengthening of the individual students to learn and find a more significant meaning for his or her life with low risk experiences documented by technological applications. Experiential education basically initiates a process of the individual with interpersonal and intrapersonal growth by using balanced experiences instead of extreme activities (Ewert & Sibthorp 2014, 6-8). The teacher's pedagogical intentionality and purposiveness are related to his or her human consciousness. With sensible and reflective awareness, the teacher is able to facilitate a young person's studying-learning process towards the understanding of diverse forms of

culture, their own skills and personal development ("meaning making") and to help the students to transfer these observations in their everyday life (Uljens 1997). The teacher as an adventure educator is an instructor for a student or participant. In this role, the teacher is facilitating and guiding a student's learning process towards the understanding of certain aims and goals of the pedagogical process. The pedagogical Outdoor adventure-based education and Experiential learning consists of the basic theoretical ideas of adult – child -relations within education. The main relationships are between a) educator, b) student, learner, participator and c) the content of setting that is understood as the Outdoors and Nature.

Justification for technological solutions in Outdoor education and Experiential Learning

What is the technological advantage that can be found in the learning in the Outdoors and nature? Is it more enjoyable or effective having these instruments in the learning processes? Can the sensitive and natural experience be polluted and decrease learning by technology? In recent years, digital technology and electronic games have had an important place in the lives of babies, children and adolescents. Games have replaced natural play, personal communication and face to face conversations. More often the applications substitute parenthood and basic feelings of early childhood, which can never be compensated for in the later ages. (Finland's National Institute of Mental Health. 2018) However, children acquire digital literacy informally, through play, and neither schools nor other educational institutions take sufficient account of this important aspect. Digital processing systems encourage participants (educator & learner) to active learning, knowledge construction, inquiry, and exploration on the part of the learners. In Outdoor education data sharing can take place between teachers and/ or learners in different physical locations. This is an advantage to the interactive notion that recognizes their development from mere information delivery. Engagement and motivation are interesting benefits in the use of games but they are not enough for educational purposes. The content of a game can produce a simplification of reality, and a lot of games are based on violent and misogynistic themes. For this reason, many critics suggest that what people learn from playing video games is not always desirable (The NMC Horizon Report Europe, 2014). Several studies (Schaal & Lude 2015) reported the effects of increased motivation to be engaged in Outdoor environmental education if children use mobile devices, compared to the use of field guides and human guides. Some authors suggest a careful reflection on the use of mobile devices in (environmental) educational settings, because learners may focus on the devices, rather than on the natural environment. Recent research results highlight the role of mobile devices as additional tools and facilitators in a pedagogical and methodological well-designed learning environment to reach educational goals, as well as to achieve a more self-determined, learner-centered and collaborative learning.

The challenge of adopting new technologies within a domain like environmental education, fostering experiential learning and practical actions in nature, would be to combine the

strengths of the "real" and the "digital" world. This should be trained, and professional development for the educational staff or at least some type of guidance during the process of creating inspiring educational programs and activities supported by mobile devices seems to be needed. (Schaal & Lude 2015)

Back to the basics: Understanding the Learning triangle

The experiential concept refers to activities into which are purposely built "suitable" risky, exciting and unpredictable elements are purposely built to be perceived by the students or participants. In the formal school adventurous activities, low risk elements such as rope courses, rowing, forest walking, skiing, skating, fishing, rock climbing and camping are used. The activities are always oriented towards something that is considered meaningful in the pedagogical process. Hereby, in the education there is also the purposiveness. There is a planned, conscious and acknowledged, institutionalized and professional purpose to make a learner, student or the participant to learn by the direction of present content knowledge of the subject matter that is planned in curricular form (Uljens 1997).

Furthermore, in every educational process there are also two fundamental phenomena of Culture and Purpose. According to Uljens (1997, 65), in the core of the pedagogical relations, the Culture can be theorized in the form of Pedagogical Triangle. The triangle consists of the basic idea of an "adult – child – formation process" and the culture (see: Kansanen & Meri 1999; https://pdfs.semanticscholar.org/9837/aa206aefd144c677ae50a944337eae1b9bfa.pdf;. The question is always about an adult's intention to understand the child during the educational influence. For example, going to Outdoor Education activities and challenges, or just leaving a comfort indoor milieu behind and walking out into a bit scary and unfamiliar forest, the teacher must have a sensitive awareness about the student's psychological characters, skills, maturity and readiness to cross over the comfort zone to meet these experiences. The ability of the child to master the goal during the activity depends on his or her age, mental state and talents. Before the activities, the teacher must gain knowledge of the student's personal characters and interests by using diverse negotiations on the outdoor tasks and challenges to come. It means an effort to, in some way, educationally influence a child's actions, attitudes, needs, temperament, personality or an understanding of the issue at hand. On the other hand, the instructing, teaching (or guiding) belongs to the field of theory and practice of Didactics (Kansanen & Meri 1999, Uljens 1997).

Learning from "Experiential Teaching and Learning"

In relation to this presentation it is significant that the pedagogical purpose of the pre-planned teaching or guiding activities enhance the student's studying - learning process. The Outdoor educator's or teacher's self-awareness and awareness of the outdoor nature values, wilderness skills, understanding of the meaning of the adventure education play a role in the teacher's instructions and teaching activities as well as in the student's studying activities. This means, for example, in a low risk river crossing on ropes that the teacher can ask the student

to shift the rope in hands to keep the body balance (didactics by verbal instructions). The teacher or a peer can also show a model (didactics by imitation and modelling, didactics by social interaction; Bandura's observational learning) or the student can try to solve the situation by her/himself (didactics by activity, trial and error). At the same time the teacher is learning from the child and about the child. In the Outdoor setting, the teacher can guide the children to use technical applications wisely, for example, to take photographs for using them in the documentation as an additional tool in learning, or to advise the children to be smart and not to twitter or chat during rock climbing (didactics by attitude and value). Afterwards, in the group reflection, the teacher can use a rich variety of diverse didactic methods, such as verbal interaction, drama, writing, storytelling, photo documentation and photo-elicitation etc., for example indoors in the classroom.

Even though the Outdoor Education aims at the student's learning new skills, personal development, and interaction, the individual student always has an unquestionable, active role either to accept or disclaim the participation of challenging acts. The teacher, as the leading and responsible adult, plans the outdoor situation in various temporal perspectives. The specific operations and activities should include the reflection moments to discuss. The reflection may take place during or after the outdoor situation.

Sensible educational ideas to use technological solutions in the Outdoor education

Nowadays across the world in the formal education curriculum there is space for the Information Communication Technology education (ICT). For example, the ICT in the curriculum of Finland's comprehensive education schools is flexible and renewal-oriented. The technology or use of applications are not an aim itself, but rather form a natural part of each subject, school culture and learning in the classrooms. The needs and suitable teaching practices of each grade are carefully planned, and the nature of the curriculum is dynamic. Integration of ICT in everyday life requires both pedagogical and organizational qualities. (New National Core Curriculum for Basic Education 2014). Applications of technology are based on science subjects, and in terms of concrete production based on practical activity. From the educational point of view, there is a special focus on the problematics between man-machine relations, the problematics between technology and ethics (such as environmental education), and the various stages and forms of technological education. Familiarity with the mathematical and natural sciences as well as technical sciences provide the students with an ability to integrate technology teaching across subject boundaries and for example with Outdoor education and experiential learning. Here we have some examples of the easy technological tools, experiential learning and didactic solutions, which can be included in formal education (students 6-16 years) to enhance positive outputs and strengthening learning from Outdoor education contents, situations and programmes.

Motivation and reflection: a) Kahoot-platform in motivating before Outdoor trip or reviewing in reflection, b) Google-maps introduction, finding interests, places, routes, distances, c) Compass to orienting in wilderness, d) Photo-elicitation process as a reflective instrument.

Graphics: Excel-matrix and table related in information of nature or environment

Art: Digital pictures, short films and longer movies with a storyline of people in the outdoor activities using Photoshop (real situations, or cutting images out of the pictures, placed them on backgrounds of their choosing, and give them printouts.

Learning by Doing: a) step-by-step problem-solving skills, b) pulling information from Outdoor experiences, memories, and basic knowledge to master a new programmes, c) basic writing skills on computer programmes, such as Word, d) documentation, photographs, moviemaker etc. e) doing the actual design, not by reading it in a book.

Text processing: a) basic writing skills, vocabulary, sentences, vowels, word processing, b) creating a spreadsheet, using Web browsers, and e-mail, c) supporting students with special needs in disabilities of reading, writing or calculating

Physical activity: GPS receivers, Glopas, emergency number 112

Social media: introduction to wise use of Skype, Dropbox, Facebook

Translation by Marja Korkala, MA

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Opening Connections with the World: Recording Outcomes for At-Risk Children through Outdoor Education and Data Technology

Mike King

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Releasing Potential is an Independent School for up to fifty children with Special Educational Needs aged 11-18 based in England. We specialise in delivering alternative educational programmes through outdoor and vocational models; our students are funded through local authorities and we are named as the full time education provision in students' Educational Health Care Plans.

For most of the students registered at Releasing Potential, placements in mainstream school and/or pupil referral units will not have worked, and, for many their experience of education will have been punctuated by long periods of absence and school refusal. In England, the number of children permanently excluded from school has risen from 0.08% of enrolled students to 0.10%; this represents a change from 6685 permanent exclusions in 2016-2017, to 7720 permanent exclusions in 2017-2018. Children with identified Special Educational Needs constituted almost half (46.7%) of all permanent exclusions and were excluded at a rate six times higher that students without identified Special Educational Needs in the last academic year (Department for Education, 2018b, pp.4-5). The barriers to inclusion faced by students with Special Educational Needs make their connections with the world tenuous and fragile—their ability to participate fully in education is limited by the models of teaching and learning currently available, most of which privilege academic attainment over social-emotional wellbeing or, at the very least, struggle to deliver both simultaneously. Having delivered education to this client group for eighteen years, we remain convinced that the outdoors offers us a vehicle to successfully combine both these elements, and should therefore be more widely used.

For children who have been excluded from mainstream school settings and have been unable to access a broad and balanced curriculum, life opportunities are narrow.[3] According to the

[3] In England, the proportion of children and young people aged 16-18 years not in education, employment or training (NEET) was estimated at 6.2% between October 2017 and December 2017 (Department for Education, 2018c, p.1*).* The figures represent a slight reduction in the number of children and young people NEET (from approximately 808,000 to 783,000).

Department for Education, the characteristics of a child or young person at risk of being long-term NEET (Not in Education, Employment or Training) include:

- Ever [being] a looked after child (LAC)
- Ever [being] in the Children in Need census but not a looked after child (CIN)
- [Having] attended alternative provision or a pupil referral unit (AP/PRU)
- Over 10% absence in key stage 3 or 4, excluded in key stage 3 or 4 or
- [Having] special educational needs at age 15 (SEN/Absent/Excluded)
- [Being] eligible for free school meals during secondary school (FSM)

(Department for Education, 2018a, p.6).

Of our own population of students, all can be identified as having at least three of the above characteristics: many have all six. Our challenge has been to find ways of ensuring that our curriculum delivers on both academic attainment appropriate to students' low starting points, and the pastoral needs of a diverse community of learners facing huge social, emotional and educational challenges. In 2016, we devised a bespoke programme of delivery rooted in five core subjects: Outdoor Education, Personal Health and Social Education (PHSE), Food Studies, Mathematics and English. Outdoor learning constitutes 20% of the core curriculum at Releasing Potential School, and is delivered via a number of 45-minute discreet sessions each week; it is also the vehicle for delivery of mathematics and English, both of which are embedded in activities such as navigating, bushcraft and outdoor cooking. Having abandoned the National Curriculum in favour of a bespoke model rooted in outdoor delivery, we are able to provide a range of practical and functional skills qualifications, and, for those who are ready for it, GCSEs. All our students leave Releasing Potential School in year 11 or 13 with a next destination: a college place, work placement, apprenticeship or training programme. We received our first OFSTED inspection in May 2018 and received a "good" rating, with outstanding elements.[4]

For most of our students, relationships with both peers and adults are a huge source of anxiety and a barrier to learning that is as difficult to overcome as academic deficits caused by long periods of school refusal. In deciding to include outdoor education as a core subject, we recognised the importance of fostering positive outcomes related to the ways in which connections with others were made and maintained.[5] Equally, we understood that outdoor education impacts a range of outcomes for children and young people and acts as

> a means of bringing curricula alive, it helps students understand our environment and related issues of sustainable development, and it encourages physical activity […] time

[4] The Office for Standards in Education, Children's Services and Skills in England (OFSTED) is the inspectorate and regulatory body for schools in England.

[5] Our model is rooted in Social Pedagogy, specifically in the work of Lev Vygotsky, who determined that learning cannot develop until learners can make and maintain trusting and productive social relationships (1978).

> spent in green spaces brings health and well-being benefits, and provides opportunities for children to learn how to evaluate and manage risks (Beames et al. 2012, p.1).

The benefits of outdoor learning for children and young people have been well rehearsed.[6] However, benefits specific to children with Special Educational Needs or those unable to access mainstream provision have been historically more difficult to gauge. Students who have become disengaged from school are almost impossible to track, because the accepted indicators of progress in mainstream settings (attendance and exam predications and results) are largely unfit for purpose in assessing the development of students who are unable to maintain school placements.[7] As Anna Conolly argues, research—particularly qualitative research—is complicated by issues around access to students who do not attend, and the ethics around researchers observing anxious students (Conolly, 2008). Alan Price's recent study of the impact of outdoor education on attendance in children with social, emotional, behavioural difficulties (SEBD) articulates another problem in data collection methods. Price's research contributes to an understanding of the benefits of the outdoors to "disaffected" children and young people, but only those whose attendance rates can be measured since they regularly or semi-regularly attend their special school placement (Price, 2015, p.111). What then, of children who refuse to leave the house, or attend off-site activities through other providers?

Students at Releasing Potential have often been excluded from school settings for long periods. Of a total of 187 students registered between 2011 and 2018, 46.5% of students had no access to education for at least nine months at the point of their referral ("Referral Figures 2011-2018"). Although an alarming figure, this reflects the national picture in England, where in the 2017-2018 academic year 19,000 students were identified as having been "off-rolled": illegally excluded and with no access to formal education (The Annual Report of Her Majesty's Chief Inspector of Education, Children's Services and Skills 2017/18).

Traditional qualitative research methods such as interviews, questionnaires, and observations have so far struggled to show in enough depth how the inclusion of outdoor education can impact a child or young person's progress in academic subjects, behaviour, attendance, or self-awareness, nor have they been able to show whether these impacts have any bearing on risk of being NEET after the age of sixteen. Of the large-scale studies that have been conducted thus far, most have focussed on a wide range of activities, client groups, methods of delivery and approaches to recording impact. Few have been able to measure progress beyond the

[6] For examples of recent studies see Thorburn (2017); Beames & Brown (2014); Blenkinsop et al (2016); Priestly & Biesta (2013); Beames et al (2012); Rham (2002).
[7] For research on school exclusions in the UK, see: Department for Education. (2018a); McGregor & Mills (2012); Evans (2010); Parks (2002).

usual, largely anecdotal, indicators of improvement in social-emotional learning that characterises the experience of outdoor learning.[8]

One of the greatest challenges we have faced, as a school, is the question of how we show progress in students for whom connections to the world have been historically fraught and for whom anything resembling school work produces anxieties that make good outcomes unlikely. In 2017, after having delivered our core curriculum for a year, we turned to technology for a possible answer—not only for recording the progress of our students, but for generating research data. This data, we hoped, could illustrate the benefits of our outdoor curriculum via mix methods research with enough breadth and depth to impact meaningful change. In collaboration with Huis technologies, a local educational software designer, we developed a cloud-based student portal that recorded outcomes for up to all fifty registered students and generated a significant number data points even for those who failed to attend.[9]

The system has been designed to align specific demographic data and timetable subjects (including outdoor education and functional skills delivered outdoors) to the following indicators of progress in our student population:

- Attendance (using a 0-5 scale wherein 0 represents total disengagement and 5 represents independent attendance in school—1,2,3 and 4 record a variety of other forms of engagement).
- Self-awareness (using an Outcomes Star model)
- Behaviour (using a SHAPE system rooted in "Every Child Matters" agenda, 2003)
- Attainments in subjects (% progress in work booklets)
- A daily log of individual progress (qualitative data tied to the day of delivery)
- A daily log of safeguarding concerns (qualitative data tied to the day of delivery)
- Destination tracking (recorded at 3,6,9 and 24 months post-graduation)

By using technology, we are now able to pose a number of research questions related to the impact of outdoor education in opening connections to the world for at-risk children and young people with Special Educational Needs and/or SEBD:

1. What is the impact of outdoor education on attendance, behaviour and self-awareness?
2. How does the inclusion of outdoor education affect attainment in the other four subjects in the core curriculum?
3. Does an increase/decrease in sessions of outdoor education impact the number of safeguarding concerns recorded for students?

[8] See, for example, "Natural Connections Demonstration Project, 2012-2016: Final Report and Analysis of the Key Evaluation Questions".
[9] www.huistechnologies.com.

4. What impact does outdoor education have on students' self-awareness – do they consider themselves better learners when this subject forms a core part of the curriculum?
5. What impact does outdoor education have on outcomes for children post-16?

We look forward to reviewing the first year of research data for students at Releasing Potential in August 2018, when we will have collected data for up to fifty students for the 2017-2018 academic year. We hope that this marks the beginning of an exciting project to analyse and disseminate findings from a broad and deep data set that will help influence policy and reposition the role of the outdoors in alternative provision as an essential feature in opening connections to the world for at-risk children and young people.

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Acoustic Augmented Reality

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To assess the feasibility of spatialized sound as a learning tool and to enhance and build engagement with differing environments and biodiversity using contemporary technologies.

Introduction

Could a soundscape, presented using state of the art technology, help encourage more young people to take an active interest in differing environments? In a day and age when gaming sees players immersed in sight and sounds, apparently oblivious to the outside world, we hope to use IT to tempt more outside. The technique is called acoustic augmented reality (AAR) and sees sound brought in to boost what has so far been predominantly visual work.

The purpose of this CREST (Consortium for Research Excellence, Support and Training) funded pilot project is the prototype development of an Acoustic Augmented Reality (AAR) activity. AAR attempts to augment real time events in order to enhance participant experience. This project has the aim, through developing a facilitated soundscape experience of unlocking the academic potential of augmented sound.

Augmented Reality

Contemporary life is awash with the relatively new mediums of virtual and augmented reality. Unlike Virtual reality (VR), Augmented Reality (AR) allows an individual to experience the 'real world' and supplement reality without complete immersion inside a synthetic environment (Kesim & Ozarslan, 2012). Predominately visual and associated with computer technology, sound has until recently been overlooked within Augmented Reality (Wang, 2018).

We often underestimate and neglect our sense of hearing in the study of environments around us and by becoming more attentive and critical listeners, we can identify and explore our environment in a richer way. Sound can be seen to play a critical role in driving the sensory and emotional involvement through an experience, with George Lucas even suggesting that "*Sound is 50 percent of the movie going experience, and I've always believed audiences are moved and excited by what they hear in my movies at least as much as by what they see*" (Mellor, 2011). We suggest that these soundscapes which change over time and reflect interventions by human and nature can be used as educational aids and enhance appreciation and understanding of our environment

The adoption of computer game sound provides interactivity and variation of soundscape elements. These elements in the soundscape can be individually controlled in terms of volume and other properties affording augmentation of the natural (real) environment. AAR provides mechanisms to explore an environment throughout time: the past, present and future whereby we can introduce narrative, induce imagination, and provoke emotional responses

As this proposal is predicated on integrating the sonic signatures of wildlife into the environment so as to augment the participants understanding of that place and its potentials, integration/augmentation is key. By wearing headphones, even if we include feedback from the surroundings, the presence of a physical interface will detract from the immediacy of the experience. One could argue that from a sonic perspective, requiring participants to wear headphones is virtualising rather than augmenting the environment. For example, when groups are all wearing headphones - as in a silent disco, the result is a lower level of interaction. One reason is that when you put on headphones you are removing yourself from your environment to a significant degree - ambient sound is attenuated and your awareness of the sonic dimensions of place will be lessened.

Educational Potential / AAR Affordances

According to Akcayir and Akcayir (2017), the rapid technological growth of Augmented Reality provides great pedagogical potential, and educational researchers have increasingly recognised this. Through undertaking a pilot study, we will ascertain the potential use of spatialized sound as a learning tool with schoolchildren and older learners. The expectation is that by providing a sound augmented environment we will be able to enhance the participants' perception of and interaction with the real word (Kesim and Ozarslan, 2012). Prince (2017) advocates that "*pedagogical approaches that stimulate sensory awareness, by their very nature encourage and stimulate curiosity, exploration, inquiry, experience and communication and address these outcomes well".* A number of authors (Kalisch, 1999; Louv, 2008) go on to suggest a relationship between a child's cognitive development and knowledge retention and sensory stimulus found in an outdoor environment.

The use of AAR offers an alternative to "eye culture" (Berendt, 1988) whereby sight is privileged over other senses (Macpherson & Minca, 2005). Through helping to develop individuals 'sonological competence' (Schafer, 1993) their experience and attitudes can change subsequent behaviour and get an individual appreciate what we have lost in the natural world and what we could potentially have again. To get people to question, what was that noise? Be able to learn its name and then on to develop a concern for it (Macfarlane, 2017).

Methodology

As the focus of the project is to examine the educational potential from overlaying acoustic information onto the participants' physical world through spatial audio, and use experiential

learning to enhance and build engagement with nature and biodiversity, a facilitated activity had to be devised. Hardware research in AR is currently focused on visual systems requiring head-mounted displays (Sicaru, Ciocianu, Boiangiu 2018). An approach predicated on sound allows the system to be decoupled from the individual and spatialised, such that no wearable apparatus is required. As such, the development of a portable rig of eight battery-powered units that could be deployed at various environments, both urban and rural was adopted. Given the resources available, it was decided that adapting commercially available systems would provide the most expedient solution to a proof of concept rig with a modular system chosen to allow for incremental development, potential for expansion and flexibility (See below).

Audio hardware

MiniRig 2 speakers have adequate weather resistance and run-time

Custom enclosures and Li-ion battery packs housed receivers for each speaker

A Fostex 1608 audio interface was selected due to its possibility to accept battery power in this case provided by a 12v sealed Lead-Acid Gel battery.

Audio transmission and reception utilized 2 Amphion 4 channel transmitters and 8 Amphion receivers.

Ultimately, the speaker/amplifiers are to be capable of autonomous operation with each unit housing a sensor, processor and speaker/amplifier. On triggering the first sensor, a pre-programmed set of sounds is played, with volume panned so as to suggest the movement of animals. Once the sequence is complete, if people are still within range, a second sequence is initiated. Multiple species and simultaneous virtual movements can be created. This proposal will be simple to deploy at any suitable location.

The next fundamental stage of the project will involve work with school groups to design a facilitated session whereby participants are given a variety of acoustic cues (mostly animal sounds) to encourage them to explore a woodland environment, and in the process experience a more immersive interaction with nature.

The techniques used for data collection and analysis will be based on involving and observing the young people's responses to the experience, through various lenses, including literature, the limitations of the technology, the young people and the researchers. This is expected to be achieved through the adoption of a likert scale where pupils are to be asked to select their enjoyment of the facilitated experience; select their perception of the authenticity of the soundscapes; provide suggestions to improve the experience and provide their overall opinion. Alongside this Mayer and Frantz (2004) proposed a connectedness to nature scale (CNS) which can be undertaken pre and post the activity. This approach may illicit a further understanding as to the value of the approach adopted.

Preliminary Findings

In stage one of the project, the system was tested in an area of woodland within Northumberland, both with the research team and in turn with a small group of school children. Initial feedback was that it was evident that the technology works, particularly concerning the choice of speakers, which possessed both sufficient volume and clarity to be convincing. The speakers were also sufficiently discrete to maintain the illusion of a non-human-generated soundscape (Figure 1).

While in the initial testing, problems were experienced in hardware performance related to interference in the radio transmission of multichannel audio, these issues are relatively straightforward from a technical perspective. The next iteration of the hardware will address the issues revealed in initial testing.

Looking beyond the technological challenges of producing suitably robust and weather resistant components and the challenges in recharge and run times in battery powered equipment, if such systems are to be considered useful in education, staff training in the use of the technology must be considered.

Summary

Throughout the project to date we have seen encouraging results and it is clear that Acoustic Augmented Reality offers an exciting interface between education and environments. The need to maintain focus on the AAR technology is evident in both its reliability, portability to differing locations and ease of use for the facilitator. In conjunction with this there needs to be continued work with the school group to identify the particular pedagogical approach adopted through the design and implementation of the equipment in an educational setting. This is crucial if the potential is to be fully realized.

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Why should you walk along a ridge if you cannot fall down? – The risk of a total safety approach in a European perspective[10]

Martin Lindner

It has been a tragically success, when on 14 July 1865 Edward Whymper reached first the top of the Matterhorn. During the descent four of the seven first climbers died. After this extensive disaster and the loss of Lord Francis Douglas (one of the first climbers) even Queen Victoria contemplated banning all mountaineering. It seemed to be too dangerous for the young aristocrats.

Today, we know that mountaineering has not stopped. But we also know that people had serious injuries or even died during their adventures. And we can state that all accidents had an outcome to the outdoor activities field. Looking back to some fatal accidents it is surprising that the outcome to the field is different. Here are some examples.

Great Britain: Lyme Bay Tragedy (1993). In 1993 a kayaking accident occurred on the southern coast of England which is known as the "Lyme Bay Tragedy". Four young people, who were accompanied by their teachers and two outdoor instructors, drowned in the accident. This accident received much attention and was much discussed by the public and by official authority. The accident and further debate led to the establishment of the Activity Centres Act in 1995 and the Adventure Activities Licensing Authority (AALA) in 1996, two interventions that had considerable effects on outdoor practices in the field of leisure and education in England. All outdoor centres had to employ staff with technical qualifications (licenses). Pedagogy was made subordinate to technical qualifications. (see Allison & Telford 2005)

Switzerland: Canyoning accident in Saxetbach (1999). In 1999, 21 tourists died in an accident during a canyoning tour in the Bernese Highlands. In 2010, after a long debate, a federal law was passed regulating all commercially offered risk activities (canyoning, rafting, whitewater canoeing, mountain touring, snow sports) and made them all subject to an approvals system. Because of the intervention of an association of professionals in Switzerland the law was slightly changed and referred to particularly high risk potential. Therefore, the field of experiential and nature orientated learning has been hardly restricted, since their activities do not normally fall under the approval requirement. (see ERBINAT 2017)

Germany: Avalanche accidents in the Alps (1954, 1982). In 1954, ten pupils and three teachers died in a snow storm and in 1982, ten young people and three accompanying adults were

[10] The presentation is based on an article written by the author together with his colleagues Martin Vollmar (see. Vollmar & Lindner 2018).

recovered dead from an avalanche. For leaders of adventure and experiential learning projects no standardised, binding requirements for carrying out outdoor practices in non-school education (e.g. Youth Welfare) have been issued by legislation, administration or court decisions.

Some general remarks to the perception of risk

Risk and danger are integral components of our world[11] and we cannot disregard them (not now and not in earlier times; uncertainty of the future has always been around us). But it seems that there is a tendency to become more and more nervous if it comes to safety questions, especially with children and adolescents. Can we, as parents or as educators and pedagogues, leave them in an unsupervised situation? Is it necessary to take them out into situations which cannot be controlled up to 100% and, which have the potential of failure?

We should bring up children in a safe way or even better in a way that they become an autonomous and responsible person. Protection is very important but is there a tendency to over-protection? Often children are in observation: parents at home and in the garden, nurturers at kindergarten, teachers and educators at school, social worker in leisure time. In Germany, we are currently in a shift from half-day school in the morning (8a.m. to 1p.m.) towards an all-day school (till 4 or 5p.m.). This transition occurs not only because of pedagogical reasons but also because of keeping kids away from an uncontrolled time at home (parents are working) or from just hanging around. The aim is among others to create a safe and controlled environment. Additionally, we can observe that more and more parents are bringing or even driving their kids to school. It is important to know that such an attitude has contra-productive effects in terms of autonomy and responsibility. A German court (in 1993) judged in a case of a five-year old boy, who rode his bike unsupervised on a parking lot in front of the house, that obligatory supervision (the direct presence of adults) even in this age does not support independency and responsibility of children. Therefore, the court argued for the pedagogical aim of the free development of the child`s personality. (see Prott 2010) With this verdict it is pointed out that there is a risk in pedagogy and education and there is also the necessity of critical situation in order to become an autonomous and responsible person. A shift from protection to overprotection does not mean to increase a safe environment.

Effects on outdoor pedagogy

What does it mean for us working in the outdoors? Outdoor pedagogy, especially in its adventurous forms, is particularly confronted with the risk discourse, because dangers and risks, which often relate to natural forces and conditions, practically jump to attention.

Risk and danger both denote, at first glance, a possible damage that may occur in the future, but which exists as a possibility in the present. Therefore, risk and danger are often used synonymously, but in the context of scientific risk theories, as for example in Luhmann (1993),

[11] See the German sociologist Ulrich Beck who used the term "risk society". (Beck 1992)

a difference is made regarding the attribution of damage. Risk involves possible damage or injury through conscious risk taking; risks are based on personal decision. In the case of danger, however, damage is assigned to the environment, to the non-influenceable. (see Vollmar & Lindner 2018)

Outdoor situations can be full of dangerous situation: steep descents, rapids, wet meadows in the mountains, thunderstorms, dense fog, heavy snow fall. These and many more situations affect us from the outside, from the objects. And we have to deal with them, we have to decide of whether to go out or not, to take the risk or not. It is a critical moment. As we never can be sure of the result (success or failure), the future remains open. Reinhold Messner (2013, 24), the famous mountaineer, took a clear stand: "We must not deprive nature from its opportunities. And the biggest opportunity offered to people by mountains is that we can gain experience; experience in the sense of adventure. We can learn something about ourselves." In a more scientific approach, and following Ulrich Oevermann (2004), a German sociologist, one can speak of crises which are the essence of educational and development processes. Crises can be situations in which something unknown intrudes from the outside and requires a reaction (1), in which individuals have to make a decision (2) or in which individuals follow their curiosity to seek out new things (3). In all these situations, the risk of failure is always standing face to face with the chance of individuals proving themselves. This pattern is of great significance especially for understanding the processes of *Bildung* of humans. The structural model of adventure concentrates on the attractive resistivity, the challenges and critical character of nature. Therefore, when speaking of risks there, it can be stated that without risks there is no experience. One can say, that risks entail a dialectic relationship, a relationship of fail and the chances to prove oneself. Referring again to the quote of Reinhold Messner (2013, 24): "From the moment in which everything is made secure, the experience to be had is only of a sportive nature, no longer a holistic one." Outdoor pedagogy lives by the openness and non-standardised character of its spaces and processes. Therefore, "no risk" amounts to erasing all impulses relevant to *Bildung* emanating from this openness and the resistances. This also comprises appropriate physical risks, without which experiential processes and growing up in the sense of individuation would run a very one-sided course.

In terms of safety questions and risk management and in terms of keeping the curiosity and the potential of experience alive, it is not the correct attitude to state "anything will go wrong" (and therefore, one has to constrain or even to avoid the risk). In contrast, one has to ask "what can go wrong and what could be the damage?". There is a need for a qualified handling of risks. Qualified in this sense means that idealistically you have to know everything about the objects (the natural world and the challenge) but also about the individual (knowledge, capabilities, current mood…).

Going back to the situation in Germany, we have no further restriction of licences and formal qualifications. In the outdoor study programme at the University of Marburg case conferences were established, which have shown their usefulness. The focus is not on standardisation of any activity but on detailed analysis of cases from outdoor pedagogical practice in order to

generate insights for future actions. The interpretation and analysis of a written protocol does not only focus on safety issues (in terms or risk and danger) but focuses also on the whole pedagogical situation.

Taking again the three European examples from the beginning: In these examples different ways of dealing with the perception and control of risk potentials in outdoor practices have become apparent.

- Technocratic safety regulations: A technocratic development of safety requirements through state regulations greatly reduces the pedagogical potentials. One could say that the adventure is being smothered by safety standards.
- Approvals duty: The obligatory approvals system at least differentiates between encounters with nature and higher risk potentials, so that restrictions for pedagogical projects only exists if practices involve a high level of exposure for individuals.
- Case studies: Detailed case analyses allow a sensible perception of the risk potential and educational opportunities.

The three examples only show a part of the European development but the tension area between risk, technocratic risk management and pedagogical responsibility becomes obvious.

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The pedagogy of technology in outdoor learning or use of the GoPro to enhance learning and teaching.

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Aims

1. To gain insight into the decision making of students for the purpose of formative review using GoPro video footage
2. To give an opportunity for students to review their own actions individually and with a peer group using GoPro video footage
3. To give insight to educators about how their own teaching impacted on student behaviour be reviewing the GoPro video footage

Background & Rationale

The role of reflection is long established as pertinent in learning (Dewey, 1933) and the use of video feedback is known to be a useful tool in improving teaching practice (Penny & Coe, 2004). Use of video for self-assessment is embedded in other degree courses which have a significant proportion of non-classroom based education such as allied health and medicine courses. Video based self-assessment has been found to significantly improve academic performance and course satisfaction whilst increasing self-awareness of strengths and weaknesses in undergraduate nursing students (Yoo et al, 2009). Use of student self-video of performance with tutor feedback and guided reflection was found to increase students' ability to reflect and self-evaluate in physiotherapy undergraduates (Maloney et al, 2013).

This video based evidence includes thinking aloud as part of the process. Ericsson and Simon (1993) introduced the 'Think Aloud (TA)' method, which involved asking participants to continuously ' TA' and report their thoughts during the performance of a task. Ericsson and Simon (1993) emphasised the importance of TA in comparison to other methods, such as retrospective recall, due to vital information that may be lost when retrospective reports are used, for example, in orienteers who are unable to recall their route upon completion of an event. Whitehead, Taylor & Polman, 2015, undertook research into TA use in golf and found that *TA has been used frequently in research to investigate decision making in chess (Gobet and Charness, 2006), medicine (Ericsson, 2004, 2007), nursing (Aitken and Mardegan, 2000), Scrabble* (Tuffiash, Roring & Ericsson, 2007)*, and algebra tasks (Cook, 2006)* and more

recently, (Welsh, Dewhurst & Perry, 2018) found that *researchers have extended their verbal cognitive pursuits into endurance sports, such as, cycling, endurance running, as well as coaching in rugby* (e.g., Samson, Simpson, Kamphoff, & Langlier, 2015; Whitehead et al., 2016a; Whitehead et al., 2017, 2018).

Ericsson and Simon, 1993, identified three types of verbal report protocols. Level 1: verbalisation is simply the vocalisation of inner speech; Level 2: involves the verbal encoding and vocalisation of an internal representation that is not originally in verbal code. For example, verbal encoding and vocalisation of scents, visual stimuli, or movement. With this level of verbalisation, only the information that is in the participants focus is to be verbalised. Level 3: verbalisation requires the individual to explain his or her thoughts, ideas, hypotheses, or motives (Ericsson and Simon, 1993). Level 1 verbalisation was the accepted practice for this work which identified how performers thoughts are directed to managing (e.g., coping, mental strategies), continual internal and external dynamical cognitive processes (e.g., stressors) during performance (Lazarus, 1999). In a recent TA study on the real-time thought processes of distance runners, (Samson, Simpson, Kamphoff & Langlier, 2015 identified three major themes containing subthemes relating to; Pain and Discomfort (e.g., stressors), Pace and Distance (e.g., coping/strategies), and Environment (e.g., coping/ strategies). Whitehead et al. (2017) found very similar results (e.g., pacing strategies and stressors) with cyclists thought processes changing continuously and becoming more prominent at different times. (Welsh, Dewhurst & Perry, 2018)

The sport of orienteering requires the orienteer to combine both cognitive and physical components to be successful. In most orienteering events winning is achieved by being the fastest to navigate to control points in the environment.

> *The orienteer must plan a route through the environment to reach each control in the order based on the information available on the map. When planning a route from the map, the orienteer might consider factors such as distance, amount of ascent, runnability and the presence of obstacles.*
>
> (Eccles, Walsh & Ingledew, 2002:327)

Orienteering is a problem solving exercise based on wayfinding demonstrating *the ability to navigate effectively* (Brunyé, Mahoney, Gardony & Taylor, 2010) *in an unfamiliar environment*.(Bjerva & Sigurjónsson 2016:3) The orienteer has to solve the problem by identifying the most appropriate pathway through the environment assisted by the use of the map and compass. *The orienteer must be able to follow this route successfully from the initial state, which is the orienteer's current position, to a goal state, which is the location of the control.* (Eccles, Walsh & Ingledew, 2002:328) As teachers and coaches of orienteering, often in absence, it is the understanding of the cognitive processes that underlie expert performance at solving this complex task that is of interest. The use of the Go Pro allows both visual and oral processes to be captured and then reviewed.

Method

First year undergraduate students enrolled on the BA (Hons) Outdoor Adventure Education degree took part in this activity. The students were provided with GoPro video cameras for use on an off-site orienteering task that formed part of an Experiential Learning module. Before the students 'headed off' on their own, they took part in a number of preparatory skill development sessions to build skills, technique and confidence. This included activities within onsite familiar terrain, star events and linking a small number of controls; an introductory session in woodland with a map walk, map orientation, feature identification, distance judgement, pacing and a permanent course in pairs; followed by the opportunity to set out 'sprint' courses for each other in an enclosed wooded environment, then running these courses individually. The aim is to give students the skills and confidence to undertake full orienteering courses of a recognised Orange Standard without staff support. The students are required to work independently and are responsible for their own decision making, actions and outcomes. The cameras were worn on a head-strap enabling the students to take part in the activity hands-free and to reduce the effect on behaviour of the presence of the cameras. The GoPro video footage was uploaded and watched by staff and students both individually and amongst peers

Discussion

When analysing the video footage, both with and in the absence of the student's, analysis was undertaken against the aims of the project.

1. To gain insight into the decision making of students for the purpose of formative review using GoPro video footage

The students undertook two Orange standard orienteering courses. It was possible to undertake a formative review between courses. When reviewing the video content key areas were selected demonstrating evidence of decision making. These included:

The start: skill – map orientation; technique - folding the map, use of the start kite and speed of departure.
Feature identification: Recognition of common features. The use of language, was there use of technical terminology or not?
Distance Judgement: Was there evidence of the use of techniques to gauge distance or not?
Effect of others: Collaboration between students, there are times when they may happen upon another or others. Is this helpful or not? Is it the loudest who is heard? Map orientation? Feature identification? Technical terms?
Doubts: A lack of belief in the map, the staff and themselves.
Success: What does it feel like to get it right and in some cases be surprised you have it right!!

Prompting the formative review with questions gave greater focus to the purpose of the review. Students were able to follow the progress of themselves or others with the aid of the map and knowledge of the course.

2. To give an opportunity for students to review their own actions individually and with a peer group using GoPro video footage

One example of this is where a student became misplaced on a course that all students had undertaken. The student took seventeen minutes to complete controls 1 to 6 and then a further seventeen minutes to complete controls 6 to 7, a distance of 200m. There was a considerable error in feature identification, disbelief in the map, disbelief in the compass and disbelief in self, until a decision was made to stop, and a significant feature was identified. In addition to the problem solving skills demonstrated the student demonstrated great tenacity and resilience to continue. This allowed a discussion related to the navigation processes in map reading or way finding. *Orienteering requires visual attention to three sources of information: the map, the environment and travel*. (Eccles, Walsh & Ingledew, 2006:77) As a novice orienteer it was evident that the student was stopping frequently to pay attention to the map and identify features. At the time they became misplaced they were not using the techniques of distance judgement, pacing for absolute distance or the simpler map orientation based on the compass. This led to confusion and an error in judgement. On eventual correct identification of a significant feature there was evidence of much relief, frustration and anger. The student 'dug deep' problem solved their situation and continued on the course retracing their steps to their last known point. This demonstration of successful problem solving, resilience and tenacity has much to commend it and these aspects of personal performance have further research potential.

3. To give insight to educators about how their own teaching impacted on student behaviour by reviewing the GoPro video footage.

Alongside the students' staff were also able to review the video footage to evaluate the strengths and weaknesses of the students and their teaching.

The general outcomes were that staff gained a valuable insight into how students were performing in the task and how students were making decisions when operating alone and in groups. It was possible to observe common limitations in students grasp of the basic skills and techniques, the decision making process in the experiential learning task and how quickly some students became fatigued. These observations enabled a review and targeting of future teaching accordingly. One particular theme which stood out was that of confidence. The students often lacked confidence in the map, the staff and themselves.

Upon evaluation of the taught sessions some changes were made such as: getting out into woods quicker, increased map walks with feature identification, pairs work and good practice

video footage such as distance judgement and pacing. The student comments supported by the video footage confirmed the positive use of a small contained arboretum to develop skills akin to a star course with a 6 control loop.

Summary

Reflecting on this in class research it is evident that the GoPro video camera proved to be an excellent tool to enhance teaching and learning in the experiential learning module. Use of the head-strap allowed students to 'forget' the presence of the camera and behave authentically when engaged with the orienteering task; producing rich video data for both students and staff to review. This promoted reflexive teaching practice in staff and reflective learning in students.

Recommendations can be made for wider inclusion of the GoPro video camera in the early stages of the BA (Hons) Outdoor Adventure Education degree to enable students to develop their reflective skills at the inception of their degree course. Review of the video footage should be used as formative feedback for both the skill development of students and the facilitation of reflexive teaching practice. This in turn can develop metacognition and quality reflective practice that is critical, analytical, dialectical, creative and inquiry based for students to become more affective learners and reflective practitioners to support continuous professional development.

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Capturing outdoor experiences using social networking sites: Exploring students' practices through photo-elicitation

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Photographs taken to capture outdoor experiences can now be mediated by technology, which has transformed their potential reach. Social Networking Sites (SNSs) such as Facebook and Instagram have enabled people to share information such as photographs, videos and text on open or closed sites, to edit media, to receive feedback or comments, and much more as the capability of SNSs expands.

This paper reports on a small-scale research project to explore the photographs of outdoor experiences that students in higher education choose to post on SNSs. This might be a reflection of the way in which students communicate their experiences and portray their identities. The research employs an interpretive phenomenological approach using content analysis of the photographs and photo elicitation interviews. It seeks to ascertain the reasons why students post photographs on SNSs, whether they share them on public (open) or private (closed) sites, whether they edit the photographs and in what way and for what purpose, whether they are influenced by the reactions and feedback they receive from sharing the photographs and if taking photographs has any deeper meaning for them.

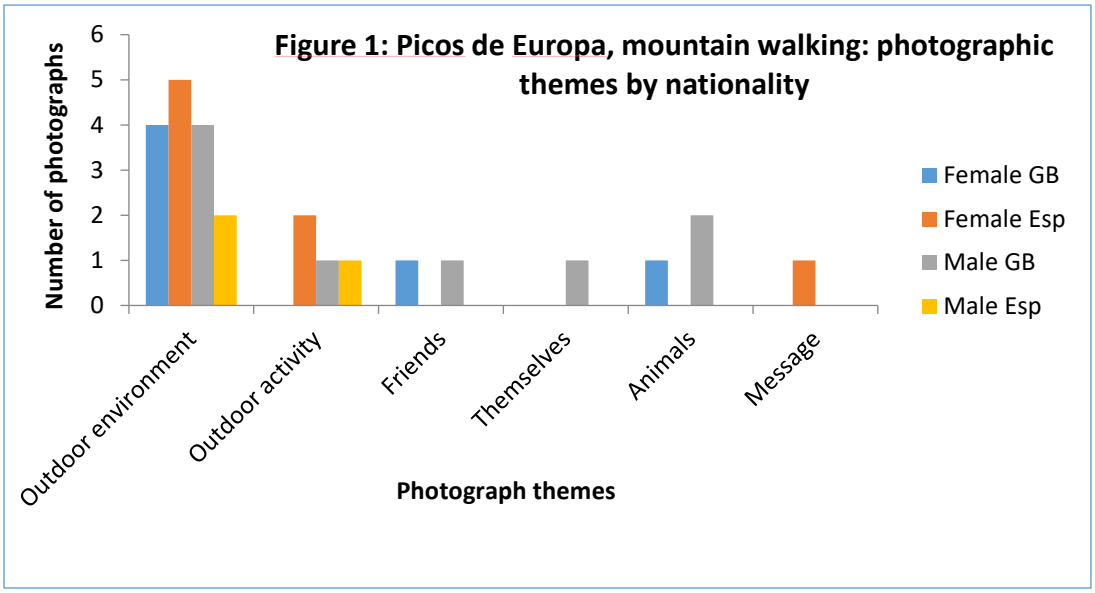
Initially, it was assumed that gender influenced the nature of photographs posted on SNSs as there is some (generic) evidence to indicate that males and females use social media in different ways. Females spend more time and have more presence than males on SNSs (Frisson & Eggermont, 2016; Vermern, 2015) and post more emotional and sentimental graphics; males post more 'joke' images or images that reflect more independence (Dominick, 1999). In a later study, Rose et al (2012) found that pictures of males included active, dominant and independent attributes whilst female users included attractive and dependent attributes.

A pilot study was undertaken by McClurg (2017) to investigate the ways in which people capture their experiences in the outdoors through photographs and how they select those to post on SNSs. Eight students, four male and four female (18-21 years) took part in two outdoor activity days (climbing and canoeing) and, after the experience, were asked to identify one photograph from each activity that they would post on SNSs. The photographs were analysed by symbolic interaction (Askan et al, 2009) in a metonymic sense (ie what is present) and coded. Semi-structured 'photo elicitation' interviews took place after the activities to further explore the reasons for taking and posting the photographs on SNSs – a metamophoric analysis (Stepchenkova & Zhan, 2013).

The symbolic interaction analysis resulted in eight categories being identified, collapsed into four themes: Outdoor activity, outdoor environment, themselves, and friends. These themes are similar to those identified in Loeffler's seminal research (2004a; 2004b) on the meaning making of outdoor experiences through photo-elicitation with students, 18-21 years before the advent of social media. Where gender was differentiated, females had taken more photographs of the outdoor environment and people during their outdoor experiences and there were slightly more photographs of the outdoor activity taken by males than females (Loeffler, 2004a). In McClurg's (2017) study, females were more likely to take photographs of the outdoor environment and to edit these before posting; males were more likely to take photographs of the outdoor activity and were unlikely to edit them.

The main study comprised two further outdoor experiences with students with the opportunity for cultural comparisons. In the first, British students and Spanish students undertook a mountain walk together in the Picos de Europa, northern Spain (n = 20, females = 11 (of whom 5 were British), males = 9 (of whom 6 were British); in the second, British students participated in a five day sea-kayaking expedition in the Outer Hebrides, UK (n=6, females = 4, males =2). In addition to gender and nationality, students were asked to state their age in classes (18-21; 22-25; 26-29; 30-39 years).

The emergent themes from the Picos de Europa mirrored those in the pilot study with the addition of 'animals' (3 students, all British; 1 female, 2 males) and 'message' (photograph of a sign, 'muerte y destrucción' ('death and destruction') – 1 Spanish female). The majority of students both male and female, British and Spanish would post photographs of the environment (see figure 1).



The emergent dominant theme from the sea kayaking expedition was of the outdoor activity and half the students offered a photograph from the same location (see Figure 2). There was no discernible difference in themes between males and females.

Figure 2: Sea kayaking expedition. Example of photograph posted on social media.

Students or the researcher also gave written summary of their answers during the photo elicitation interviews in their native language to facilitate naturalistic answers. Where notes were made by the researcher, the respondent gave their agreement that these were an accurate representation of the conversation, post interview. The responses in Spanish were later translated to English.

The most frequently cited reasons for taking photographs in the outdoors were: to capture/document memories, to show family/friends and, for the views/picturesque. There were no differences in the qualitative data between males and females. There was evidence of more extrinsic motivations of older students (22-25) particularly amongst Spanish males, "to see others enjoying what is new to them"; "to encourage others to value nature more"; "taking photographs is a fusion between man and nature". Similar numbers of students would edit or not edit their photographs before posting from both cultures. The most common reasons for editing were to alter 'saturation', 'sharpness' and 'size' and responses emphasised that editing would be to improve photographic quality rather than the nature of the image it portrays, "to enhance detail not distort reality", "to improve/strengthen what I am trying to express with a photo", "for my blog".

The interviews explored the posting preferences of the students and there was a marked difference between older and younger students. No students 26 years and older would post to public sites, one would post to a private site with the rest rarely posting (n = 5). In contrast, the younger students would all post to public or private sites (n =21), with the majority of 22-25 year olds publishing to both.

The students were asked whether they felt that taking photographs had a deeper meaning for them. Students aged 18-21 nearly all reiterated the reasons for taking the photographs but the older students' responses illustrated consideration of their *value*, "I don't think that a photo can ever fully reflect an experience. It is literally a snapshot of an experience. It often

reflects a beautiful place but not always the experience as a whole" (Female, Spanish, 26-29) and more *extrinsic* meanings, ""I would like to think it would encourage more people outside/to experience beautiful places" (Male & Female, Spanish, 22-25; Female, British, 18-21); "We do not know many places that surround us and people are not aware of landscape degradation" (Male, Spanish, 22-25).

Older students seemed to have a broader perspective on the function and meanings of photographs, "Photography can have a deeper meaning as an art form, a means of expression, and as a way to process an experience" (Female, Spanish, 26-29); "Seeing photos afterwards adds new perspectives I didn't think about before" (Female. British, 30-39). They were considerate of the function of SNS's, ""I am not so keen to live in the public age as I feel that this dilutes the experience in some way and we are losing the act of storytelling" (Male, British, 30-39); "A lived diary" (Male, British, 30-39).

The qualitative research with a larger sample found no differences between genders in the themes of photographs that they would post SNSs. Students posted photos to share to capture/document memories to share with family and friends, and for their aesthetic value. (as in Loeffler,2004 a; 2004b; 2005). There did not appear to be differences in the reasons for posting between males and females, although there was evidence of extrinsic values particularly amongst Spanish males. For older students, there is evidence of deeper meaning in photographs and where and why they do or do not post them on SNSs; nearly all younger students see the meanings in the same way as their reasons for taking photographs and posting them; older students rarely post photographs and a minority posted to private sites (including WhatsApp).

This research has indicated some interesting differences in the sharing of photographs on SNSs with age and the meaning to individuals. There are limitations to the study in that the researcher was a member of staff (and not a peer as in the pilot study) and requested the photographs after the event. Thus, students might have selected photographs more judiciously for the research and they might deviate from the immediacy of posting during the outdoor experience. The data interpretation is qualitative and they have not yet been subject to multivariate analysis.

The outcomes of the research to date raise a number of questions in terms of whether SNSs and the possibilities offered in opening content to a wide audience if so desired, made some students interrogate more deeply the meanings of photographs and the reasons for taking them and sharing them, or not? Why is it that younger students do not see a deeper meaning (beyond memories, capturing the moment and sharing with family and friends)? Have they lived with SNSs all their technological lives? Or, are they not yet mature enough to see or reflect on any deeper or extrinsic meanings, or perhaps they do not wish to articulate such meanings?

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Tablets/smart phones and spring meadow

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Abstract

The nature has positive influence on child's development. Children exercise more, are healthier, have better-developed motoric functions. Frequent visits to the meadow improve focus, concentration and learning motivation. Other positive effects are: more imagination, better observation ability and better social skills as well as less stress and greater self-confidence.

Meadow as a habitat offers numerous possibilities for teaching and learning. As innovative learning environment, the meadow enables learning according to pupils' interests. It enables child tailored learning and physical activity, provides space and time, enables learning with and alongside the class mates and provides a wide choice of teaching methods. Finally, it is a perfect starting point for an interdisciplinary approach, even more: the interdisciplinary approach outside, where different knowledge and skills are merged into deeper knowledge, representing a challenge for every teacher.

Didactical units are planned in a way to require active participation. They encourage pupils' experimental spirit. Pupils are independent in researching, taking notes, exploring, listening and experiencing the meadow.

We are integrating ICT informational communicational technology in the lessons. Pupils are very familiar with tablets and mobile phones. At school we would like to show them how to use mobile phones and tablets in a useful way. We are informing them about the programs which support lessons.

Different activities encourage innovation ability and creativity of children.

Key words: natural environment, meadow-innovative learning environments, experimental learning, ICT Informational Communicational Technology, identification key.

Introduction

I have been carrying out teaching in natural environment in my class for several years now. Outdoor cross-curricular teaching and natural science research are the basis for lessons outdoors.

In the nature, on the meadow we are more at ease, readier to learn through playing and ready for activities that motivate the children and lead to researching. The meadow is a new,

innovative environment which enables learning which involves children here and now. The acquired knowledge with full self-awareness is deeper and more permanent.

Enthusiasm and positive attitude of the pupils and the teacher to go outside, to the meadow unites them and joins the class into a homogeneous group. To feel yourself and the environment arousing in this way the joy to exploring on the meadow required the inclusion of various techniques and technologies into the outdoor lessons.

The first task to implement any outdoor activity is good mastery of the objectives of every single subject. We must precisely plan the course and timing of lessons. We must choose an appropriate place outside in the nature. We must be familiar with the children's level of development and organize the activities accordingly.

The lesson plan includes activities and exercises that arouse attention and awareness of pupils. Moreover, it includes the IT, that is tablets and smart phones.

Meadow – Learning Environment

A meadow is a natural habitat, an ecosystem vegetated mostly by grass and flowers. Meadows were created by human deforestation. Meadows are characterized by an exceptional diversity of plant species, and with its flowers it attracts many insects. There are a series of ground animals, small mammals and birds.

Meadow stimulates learning within the child's interests, enables child-tailored learning, movement, offers space and time, allows learning with peers, enables a choice of learning method, and finally it is an excellent starting point to become aware of oneself and their feelings.

Child-tailored Learning – Developmental Level

Children in the second triennium are from 9 to 11 years old. In this period, they are still in the phase of concrete operations.

Above all children need a lot of movement, a lot of different activities which motivate them in various ways for work and learning. The movement development is closely linked to emotional, social and intellectual development.

General Objectives of the Subject Natural Science and Engineering, in continuation NSE (Naravoslovje in tehnika) in the 4th grade

Pupils have opportunities to experience the nature, natural processes and phenomena. The learn to change their environment with consideration and prudence. They find out that we must save with the natural resources and keep the biodiversity of the nature. They grow a positive attitude towards the nature and technology and a critical attitude towards the human interventions into the nature. They practice the methodology of researching, asking questions, forming hypothesis, gathering information, arranging them, referring about their findings. (Vodopivec, I., Papotnik, A., Gostinčar Blagotinšek, A., Skribe Dimec, D. in Balon, A. 2011).

As the stating-point subject Natural Science and Technics have been selected.

Informational Communicational Technology

Informational Communicational Technology or ICT is used at school along with the obligatory curriculum.

Pupils, younger as well as the older ones, are enthusiastic about working and learning with computers and tablets, as well as they enjoy using smart phones. Teachers and other pedagogical workers must show the pupils the useful use of tablets and smart phones. We must teach them how to use them as an aid to find data, identify plants or to translate words.

We took tablets and smart phones to the meadow. It was planned to use them only for specific activities. The ways of using them were limited and defined.

Didactics – forms of Activities

Didactics, or technics and skills of teaching, change considerably outdoors. The activities are devised as actually active. They are orientated to researching, exploring, finding information, feeling and experiencing.

The influence of the nature on the children's development is mostly positive. Children get more movement, they are healthier, have better motoric skills. Recurrent visits of meadow or other outdoor environment improve their attention, concentration and motivation for work and learning. They also feel less stressed and are more self-confident. The basic activity is natural science research.

Integrated Development

The integrated development comprises the physical, intellectual and emotional levels. We must also consider a human being as a whole. We develop all the levels of human personality and all the potentials one has got. But nowadays at school, at frontal lessons, we often neglect the physical and emotional level. In the nature on the meadow we can experience, sense, internalize the feelings and build ourselves as a whole. (Rifel, 2017). And when in the nature, feelings and connecting the sensations with natural science topics actually come naturally. Being aware of yourself and of the nature is basic for integrated development. Pupils acquire knowledge by observing, measuring and searching.

Lesson plan – Practical Activity

Description

To describe a naturalistic research on the meadow we have chosen the 4th grade of elementary school.

The implementation of the lesson was harmonized with the presence of special pedagogue in the class, meaning Thursdays, once a month. We joined more lessons to be able to carry out various activities on the meadow. Near our school there are a meadow, a hill, a river, a valley

and a forest. The time we need to get to the meadow is 5 to 10 minutes. The walk always warms our bodies and prepares us for further learning.

When planning the lesson, it is important that we know exactly what should the pupils know, which activities and how we will carry out, how we will reach permanent knowledge, knowledge for the lifetime. In the course of work and learning, on the one hand, there are exercises for calming and self-awareness, and on the other, there is use of smart phones.

Learning Contents and Objectives

Natural Science and Engineering (Naravoslovje in tehnika)-living creatures, kingdom of plants.
Fine Arts–observing and drawing a flower.
Slovene language -description and expressing the experience, description of a plant.
PE–meaning of movement on fresh air: natural forms of movement: walking and running.
Environmental Education–awareness of the human's responsibility for sustainable development.

Minimal standards for NSE–observing accurately and systematically with more senses, working with resources: gaining the information, using them, but being critical, recognizing the basic characteristics of some major families of plans (for ex. Flower plants, mosses, fern), recognizing and naming the most common plants, animals and fungi in the immediate environment. (Učni načrt Nit, 2013, str. 22 = Curriculum NSE, 2013, p.22)

At outdoor teaching the individual for of work intertwines with pair work and group work. In most cases all three are used. Methods of work are direct instructions method, discussion method, experimental method, research-based method, demonstration method and ICT-based method.

Table 1: *Activities, forms of work, awareness, integrated development and objectives in the lesson plan*

ACTIVITY	FORMS OF WORK	INEGRATED DEVELOPMENT, AWARENESS	OBJECTIVES
My place beside…..	Individual.	Physical, psychological level. Awareness of oneself and the place.	→Master natural forms of movement (PE).
Flowers of a certain color – worksheet.	Group.	Intellectual, Psychological level. Listening, observing, feeling, researching, searching for information.	→perceive precisely and systematically→to observe with all the senses, →acquire information and handle them in a critical way, →recognize the basic characteristics of some major plant families (for. Ex Flower plants, mosses, fern), →recognize and name the most common flowers (NSE), →closely observe and draw flower (Fine Arts) →describe a plant (Slovene language)

Tell me what it feels like.	Pair work.	Intellectual, psychological. Awareness.	→Get to know and name most common plants (NSE) and → express the experience (Slovene language)
Break, snack	Group.	Rest.	
Presentation of solved worksheets.	Individual, frontal.	Psychological, Intellectual. Reflection, evaluation.	Oral performance.
Lying in the grass. Conclusion	Group, frontal.	Intellectual, Psychological and physical. Moments of attention.	Awareness and relaxation.

Evaluation

My outdoor lessons on the meadow were well planned and the pupils were guided from one activity to another. Everybody worked diligently, investigating, solving and experiencing. The instructions for finding the data on mobile application were given with direct method. I helped to some pupils since they didn't know all the flowers. As additional aid we used some books on meadow flowers. The pupils had time to play, time to work, time to create, time to rest and time to reflect. Contemporarily and after the activity I elaborated SWOT analysis. In the analysis we are aware of the opportunities, get rid of weaknesses, take advantage of strengths and avoid threats.

Table 2: *SWOT analysis*

STRENGTHS	**WEAKNESSES**
Interdisciplinary planning, more objectives.	More time for planning needed.
Relaxation and fresh air.	No teachers for escort.
More forms of work and more methods of teaching.	Inability to use mobile apps.
Bigger space for movement, natural environment.	Weather disturbances.
Motivation for using mobile apps.	Distance; time consuming.
	Transferring photos from devices, time.
OPPORTUNITIES	**THREATS**
New way of work, my place, thought in a jar, creativity.	New activities take more time.
Including pupils' interests, abilities and feelings.	Damage to the plants.
Developing a research spirit.	Falls.
Getting to know new plants.	Listening and hearing.
Demonstration of pupils' skills in using smart phones.	Animals – wasps, mosquitos.
	Loss of phones.

Conclusion

To reach the objectives of singular subjects for interdisciplinary teaching one must know some basic laws governing the outdoor education.

Outdoor lessons demand new proficiencies, new approaches, new activities and new or different organization. All these proficiencies, activities, approaches and organization have to be joined organically into the lesson plan.

The meadow as a new innovative place offers us plenty of possibilities for work, learning and playing. Every time we return back to school I am surprised at how we feel that we have done lot more on the meadow, that it was more interesting and more relaxing. The pupils are more creative at other challenges and work in the class. They build and raise their confidence.

By including the relaxation and awareness our senses have become sharper and we have gained deeper acquired knowledge. The pupils have accepted the exercises as a game. They began to feel themselves and the surroundings. (Černetič, M., 2018).

The use of smart phones and tablets requires exact and well-defined time frame. We include them when needed, that is to find information and to take photos. The use of ICT for outdoor educations – yes, but goal orientated and well planned.

Using new approaches we can reach various learning, physical, emotional, intellectual and social objectives. The meadow allows the pupils to be aware and to experience in an innovative and creative way. The pupil grows an integrated and happy personality.

Picture 1: *Pupils during the final activity - lying in the grass.*

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Author

I am a primary school teacher. I teach in the fourth grade, my pupils are 10 years old. My thesis dealt with resources of software programs for the pupils in lower classes in the primary school. My professional interests lie mostly in sports and outdoor education. I have reached diplomas in mountain guiding, cross country coaching, and alpine ski coaching. Trough outdoor sports I have started to learn about outdoor education. I participated at an outdoor-education seminar in Iceland. I organized several outdoor camps in mountains for pupils in our school. The Real World Learning in Planica 2013 made me enthusiastic. Last year I fully participated in International conference Woods - the best and the most beautiful classroom. Last but not least, I take my pupils outdoor as many times as possible.