

Overview – The Real World Learning Network

The Real World Learning Network is a consortium of outdoor learning providers across Europe. Our goal is to explore and share successful approaches to outdoor learning that increase action for sustainable development. We believe that outdoor learning offers one of the best approaches for young people to engage with the world around them, and provide a stimulating context to explore how we can all contribute to a more sustainable present and future.

Chapter 1 – the big picture and the Real World Learning Model

Our initiative to create a model for outdoor learning for sustainability is rooted in a workshop which took place at our conference in November 2013 in Planica, Slovenia. The workshop aimed to connect the different areas of learning for sustainability with which the Real World Learning Network is dealing.

After the conference a core group was established to collect feedback from the project and to develop an idea for a Real World Learning model for teachers and providers.

Intending to connect the different threads of Real World Learning, we ended up with six key areas. The Real World Learning logo offered inspiration for a model based on a hand – with the palm as one key area connecting the five other key areas represented in the fingers.



The key areas of our model touched by the five fingers and lying in the palm are:

1. values;
2. empowerment;
3. experience;
4. transferability;
5. knowledge;
6. frames.

Each key area is opened up by a key question and supported by up to six attributes or 'ripples'. The key questions and ripples provide orientation for the understanding and applying of the 'philosophy' of the RWL model. The key questions and ripples are mirrored by the set of Real World Learning Quality Criteria which have been developed by one of the four project working groups. The aim of the quality criteria is to assist the provider or teacher of an outdoor learning programme with evaluation of the planning, delivery and learning. Within the model they can be depicted like a glove that fits to the hand without imprisoning the fingers.

Each area of the model is framed by a driving question:

1.1. Are self-transcendence values promoted? (values)

Values represent our guiding principles; our broadest motivations, influencing the attitudes we hold and how we act. Self-transcendence values support bigger-than-self thinking and action. Being concerned about the wellbeing of others and the planet is essential for sustainability.

- **Respect for nature and care for the state of the planet**
This recognises the core universalism values that relate to nature, with the goal of preserving the natural environment.
- **Equal opportunities for all people to shape their lives**
This recognises broad societal concern, with the goal of commitment to equality, justice and protection of all people including the welfare of those directly around us.
- **Respect for future generations**
This recognises the need for our thinking and action in the present to be aligned with needs of future generations in terms of all living things.

1.2. Are learners empowered to shape a sustainable future? (empowerment)

Empowerment brings the learners to the centre of the learning experience: it's about recognising and realising their own humanity and their own ability to take action for positive change. Empowering learners enables them to cooperate and to take ownership of their learning. Everybody can make a change. To experience this can help learners to shape the future in a sustainable way.

- **enable learners to cooperate, participate, take responsibility and learn in a self-directed way**
The success of a truly sustainable society, as is true for any healthy ecosystem, will be based on elements or individuals in that society cooperating for the greater good. This means that individuals cannot stand back while others do the acting, they must participate, offering their contribution to the whole. If these two

elements are to be effective then individuals, and collectives, will need to take responsibility for their actions, and to act responsibly, thinking beyond themselves. The culmination of these three elements is that learners can take the initiative to pursue learning and be responsible for its completion, a fundamental competence for sustainable living.

- **enable learners to deal with their own feelings and the feelings of others**

To achieve cooperation, participation and responsible action in a sustainable society there is a great need for emotional intelligence amongst its citizens. Issues of sustainability go far beyond just understanding, they involve deep emotions and feelings on an individual and collective level that need to be recognised, processed and evaluated in order to guide thinking and action for sustainability.

- **enable learners to be reflective and critical thinkers – considering different perspectives to reach informed opinions and decisions**

To be empowered to think reflectively and critically is key to sustainable living in a changing and challenging world. There is such a broad range of information and stimulus available that informs thinking, behaviour and action; learners will need to be competent reflective and critical thinkers in order to form their views through a deep learning process, basing decisions and actions on the best available evidence.

- **allow learners to take ownership of their learning and reflect on what and how they have learned**

Reflecting on what you learn and being prepared to learn continuously means to be ready for change and improvement; it makes us aware of our role in the world and the need to be ready to participate in a positive and meaningful way. It is important for learners to recognise what learning has arisen in any given situation and how they learn the most effectively, the learner will then be empowered to take responsibility of their learning as an active citizen.

- **empower learners to be creative, flexible and able to take positive action to deal with change**

If we are to live in balance with the planet as a sustainable society, creativity will be essential in finding solutions to the challenges we face individually and collectively with respects to sustainable living. Environmental and societal change is inevitable, thus a sustainable society will require its citizens to be adaptive and resilient to these changes, being flexible in their approach, outlook and response to the challenges presented. To make these competences truly sustainable in nature they will have to be manifested in positive action, action that has a constructive and restorative social and/or environmental impact. Sustainability is nothing without positive action.

- **enable learners to become conscious of interconnectedness - you, me and the world around**

Interconnectedness refers to the idea that all things are one. In this time of intense global challenge it is critically important to remember this interconnectedness; thinking, feeling and acting accordingly are essential requirements to building sustainable organisations and communities - ensuring a healthy future for the planet.

1.3. Do learners get in touch with outdoor settings? (experience)

By getting in touch with an outdoor setting learners can experience real life with their head, heart and hand. Following their curiosity, becoming sensitive to the complexities and interconnections around them and recognizing that they are a part of a bigger system. This intensity of experience is held and lifted by the other aspects of the model.

- **provoke and raise curiosity**

Curiosity connects with learning in two important ways. It is a source of motivation, as these descriptions indicate, and it's powered by questions, both, student's and teacher's. Provoking is a crucial part of teaching. A simple story, an unexpected moment may start a process of dissonance leading to new questions and ideas.

- **increase sensitivity**

In the outdoor setting we have the unique opportunity to challenge and develop peoples' attitudes towards nature and environmental issues via direct contact with the environment and various kinds of sensory activities. It is the way to develop environmental sensitivity of pupils and promote their love of nature.

- **involve learners with head, heart and hand**

Whilst education about the environment could be interpreted as being concerned with the head, and education in the environment with the heart, education for the environment can be seen as involving the hand. The integration of education about, in and for the environment forms a holistic head, heart, hand approach.

- **use a variety of methods and reveal something new to the learners**

Not a single educational model fits for everyone and everything. When we draw from a richness of methods and strategies, we also respect diversity of learning styles and individual experience of our pupils. Whatever methods we use, pupils should find new experience relevant for their personal lives. Meaningful experience can change the way we think, feel, or live. Meaningful experience stimulates our learning.

- **remain open to the outcome**

Facing wonders of nature, challenging a real-world issue, pupils always give their own meaning to their experience. Pupils' learning is always theirs, not the teachers'. It is important to remain open to pupils' ideas and respect even unpredictable outputs as the source of our own learning.

- **provide opportunity for action and enjoyment in real world settings**

Pupils should not only be informed about an issue but they should be provided by an opportunity to deal with that issue – to do their own action and to see a change. Experience of success can develop a belief in their capacity to promote a change and develop practical skills for dealing with environmental issues. If the learning process is enjoyable, positive emotions will be involved and learning will be more efficient.

1.4. Are different areas of life included? (transferability)

Sustainability goes through all areas of life. Therefore it is important to transfer learning, not only in terms of understanding such as a scientific concept but also in terms of experiences had, actions taken or values held. This allows the learners to make connections between themselves, their communities, global society, and the non-natural and natural environment. This will require the facilitator to encourage active transfer of the learning during and after the learning experience.

- **Related to global society**

This term is widely used as referring to the world society in the age of globalisation. In the learning process it means to connect the learning around scientific concepts, values, experience or empowerment with global issues that mirror this learning at the global scale.

- **Related to learner's communities**

Means in comparison to the global society the smaller, local society: the place in which we live and the people that form this place, our families, friends and neighbours. On this level the individual has the best chance to take actions for sustainable development.

- **Related to the non-natural environment**

This is the technical environment which humans have created. Take into account in your work where you can see the effects of humans on the environment or what the drivers behind these inventions are.

- **Related to the natural environment**

Everything that is around us and which has not been made by humans: our planet, its elements, organisms, plants and animals. Allow your learners space and time to explore nature, learn in and about it and understand the principles behind, for example the cycling of nutrients to other areas of life.

- **The learners themselves**

This involves the thoughts, emotions, knowledge, actions and physical being of the individual person. It is important that the learners understand themselves as part of the natural world. Most natural processes can be experienced in their own body, in society and in the non-natural world – all of which have an influence on the individual.

1.5. Are scientific concepts of life involved? (understanding)

Scientific concepts, like cycles or change, infuse all areas of life. Understanding these concepts means to understand the complex interplay of process and pattern that sustains life. However, true understanding comes from combining a scientific approach with emotions, values and humanity. Exploring scientific concepts of life in this holistic way develops thinking and action for sustainability.

- **Cycles**

Cycles are processes that can be repeated continuously without degrading the ability of other processes to continue. Cycles in an ecosystem intersect with larger regional and global cycles. We find many cycles in nature: seasons, diurnal cycles, particles, elements. Nature operates within cycles, nothing is created nor destroyed. Cycles are processes that can be repeated continuously without degrading the ability of other processes to continue. Diurnal patterns of sunrise and sunset, and seasonal cycles of spring through to winter take place and are celebrated. Nitrogen, phosphate, carbon and oxygen cycle through processes such as transpiration, decomposition, weathering and photosynthesis.

- **Change**

The world around us never stays the same; it is constantly adapting and responding to feedback and changing conditions. Living in a changing world means that what worked yesterday might not work today or might not be suitable for future generations. Change could be considered a threat for some ecosystems and societies, but without change there would be no development. Nothing stays the same, there is constant evolution as biodiversity adapts and variations emerge; energy transfers and changes as it flows from sun to leaf to insect; molecules of carbon, hydrogen and oxygen constantly come together and break apart as they form the structures of all materials.

- **Stability**

Stability is the concept of dynamic balance. All systems have feedback loops, acting to maintain the system in a relatively stable state. Small fluctuations around the optimal system variables keep the system within tolerance limits. Go beyond these limits and the system can alter forever. Nature is in dynamic balance; ecosystems do not evolve towards monopolies with only a few dominant species; all things are interdependent, based on the causes and conditions which created them. All systems have feedback loops, acting to maintain the system in a relatively stable state.

- **Energy Flow**

Energy flow is the movement/transfer of energy between the elements of a system by biotic and abiotic means. As energy flows between different parts of a system it is transformed into different forms of energy. Energy originating from the sun cascades through systems changing from light to chemical energy via photosynthesis and into mechanical energy through digesting plants to create carbohydrates which power animal life.

1.6. Is there a frame providing a connecting story?

When we hear the word 'nature', subconsciously a bundle of different memories, emotions and values are activated. Such associations, often leading to strong narratives under the surface of our awareness, are called 'frames'. In our model the frame is in the palm of the hand. Using a strong frame, for example '*small changes can have a big impact*', ensures that values, empowerment, experience, transferability and understanding are

connected, leading to a deeper sustainability learning experience. Placing frames in the centre of a Real World Learning experience has two significant purposes:

- Frames act like a guiding light for teachers and learners, allowing self-directed learning to occur without getting lost.
- Frames provide a deeper meaning for the learner, revealing single facts as parts of a bigger story.

Imagine you are working on a stream keeping in mind the frame 'Small changes can have a big impact'. Ask your learners to experience this idea; e.g. they might change the water flow by removing a stone. Encourage them to transfer this finding to other areas of their own life and to consider its relevance in terms of care for nature. Although the process of learning is quite open, you know where you are heading for and your learners feel that this outdoor experience might be much more meaningful for their lives than just 'learning something about a stream'.

Frames are not just catchy slogans for the learning experience. They should go deeper, down to values for sustainability. When developing a frame it is important to keep in mind what bigger picture or story we wish to trigger and how this will resonate with the learners in their understanding of being a part of the system with which they are dealing. This will be determined by the values it promotes.

Chapter 2 – Quality Criteria

The set of Real World Learning Quality Criteria was developed alongside the hand model. The six criteria refer to the six parts of the hand – the palm and the five fingers. The criteria are sub-divided into different sub-criteria which explain and define each criterion and into different indicators. Both the sub-criteria and the indicators should be used as a checklist by the provider or teacher to review his or her learning programme.

RWL-Criterion N° 1: The learning programme has a “frame” - one main underlying message, related to sustainability.

→ Referring to the palm of the hand model: Is there a frame providing a connecting story?

Sub-Criteria

- a) All topics express, implicitly or explicitly, the main underlying message.
- b) All methods (activities, games etc.) express, implicitly or explicitly, the main underlying message.
- c) All physical settings reflect, implicitly or explicitly, the main underlying message.
- d) The learning programme reflects a good energy return on energy investment. The positive impact of the project is greater than the harm caused by it in terms of sustainability.

Indicators

- 1) The main underlying message supports the sustainability agenda.
- 2) The learning programme curriculum or agenda explicitly states the underlying theme.
- 3) All topics and methods used are outlined and explicitly linked to the underlying theme.

RWL-Criterion N° 2: The learning programme promotes self-transcending values.

→ Referring to the thumb of the hand model: Are self-transcendence values promoted?

Sub-Criteria

- a) The learning programme promotes awareness that all people have the right to their own perspectives, beliefs and values.
- b) The learning programme helps learners to understand and accept the need for *all* people to be regarded at an equal level.
- c) The learning programme helps young people to understand the different opportunities of different people and communities.
- d) The learning programme promotes respect for nature and care for the state of our planet.
- e) The learning programme promotes respect for future generations.
- f) The learning programme emphasises values that promote self-direction and benevolence.

Indicators

- 1) The learning programme curriculum provides space and opportunity for respectful debate.
- 2) The provider actively works with the young people to ensure that there is an environment of mutual respect.
- 3) The learning programme curriculum encourages all participants to contribute their own opinion or perspective.
- 4) The provider actively tries to ensure that he or she approaches all participants equally.

RWL-Criterion N° 3: The learning programme actively and holistically involves young people to empower them to develop sustainability.

→ Referring to the index finger of the hand model: Are learners empowered to shape a sustainable future?

Sub-Criteria

- a) The learning programme encourages young people to think critically and make their own judgements independently.
- b) The learning programme promotes a positive attitude to risk and uncertainty.
- c) The learning programme allows young people to “sink into” (personally experience) outdoor settings and make them aware that they are part of nature.
- d) The learning programme facilitates self-efficacy and young people’s ownership of their own learning.

Indicators

- 1) The learning programme includes all young people in active participation and offers opportunities to direct their own learning (including the option to say ‘no’).
- 2) The learning programme includes opportunities for the young people to carry out their own risk analysis for the activities involved.
- 3) The learning programme promotes awareness that it is not always possible to predict the outcome of a situation.
- 4) The learning programme provides the opportunity for young people to reflect on their experience and learning.

RWL-Criterion N° 4: The learning programme encourages first-hand experiences, using different methods within a broad variety of natural and cultural learning sites from different areas of life.

→ Referring to the middle finger of the hand model: Do learners get in touch with outdoor settings?

Sub-Criteria

- a) The learning programme encourages direct contact using all five senses in the out of classroom sites and settings.
- b) The learning programme uses activities that address different learning styles.
- c) The learning programme allows space to adapt to the personal learning processes of the young people.
- d) The learning programme allows space for positive and joyful personal experience in the environment and ‘real world’.

We understand the provider more as a facilitator and coach than an instructor or teacher.

Indicators

- 1) The learning programme contains education methods which focus directly on personal experience in the environment and ‘real world’ (e.g. case studies simulations or role games).
- 2) The planning of the learning programme ensures that all five senses and all learning styles are engaged.
- 3) The provider aims to ensure that questions and interests arising are explored as part of the learning programme.
- 4) The evaluation of the learning programme gathers feedback from the young people on whether they have any questions or concerns that were not explored.

- 5) The evaluation of the learning programme gathers feedback from the young people on what they have learned or gained from the experience.

RWL-Criterion N° 5: The learning programme helps young people to understand the connections and interdependence between the targeted ecological topics and the related economic, social and cultural areas as well as community and personal life.

→ Referring to the ring finger of the hand model: Are different areas of life included?

Sub-Criteria

- a) Parts of the learning programme target community/local/national level socio-cultural, economic and ecological issues relating to the global issues assessed.
- b) The learning programme encourages the learner to make links between their everyday lives and issues of global justice.
- c) The learning programme helps the young people to understand the systemic dependencies, connections and patterns at global level from economic, social and ecological points of view.

Indicators

- 1) Community, local or national issues are included in the topics discussed.
- 2) At least two of the social, ecological, economic or cultural perspectives of the topics should be highlighted.
- 3) The methods used aim to ensure that the young people understand the connections and interdependencies between social, ecological, economic or cultural issues.
- 4) The provider should ensure that an explicit link is made between global issues and the everyday life of the young people, and that there is time in the learning programme for reflection on this.

RWL-Criterion N° 6: The learning programme integrates scientific concepts of life relating to sustainability.

→ Referring to the little finger of the hand model: Are scientific concepts of life involved?

Sub-Criteria

- a) The learning programme promotes awareness that scientific concepts of life are universal. Examples to use: cycles; self-regulation; energy flow etc.
- b) The learning programme tailors the complexity of scientific concepts to the age, abilities and prior knowledge of the young people.
- c) The learning programme's use of scientific concepts is designed to take account of the young people's local surroundings.

Indicators

- 1) Where a scientific concept is used as part of the learning programme, more than one example of it in action is used.
- 2) Scientific concepts are expressed in a number of different ways (visual, verbal, demonstrations etc.).
- 3) The provider gathers sufficient information about the needs of participants and their local surroundings to ensure that the learning programme is properly tailored.
- 4) The methods used reflect the age, abilities and prior knowledge of the young people.

Chapter 3 – How we reached these results – the justification

The RWL Network established four working groups to explore different areas of outdoor learning and sustainability. As their work progressed, the need for a core group to bring the working group results together emerged.

3.1. Working Group 1

We started by exploring different quality criteria and assessment systems for Outdoor Learning, Education for Sustainable Development, Global Learning, Adventure Education etc. in the different organizations and countries. By trying to make the systems comparable in a synopsis we realized the broad variety of approaches and how different our understandings of a) terminology and of b) processes in quality management were. We learnt that we should not underestimate the common understanding of terms for our work on quality criteria. Concerning terminology we worked out some definitions for our work.

Still it was difficult to make the different approaches or even more “philosophies” in evaluation comprehensible and among working group colleagues. Concerning the processes or “philosophies” of evaluation we have two movements: Those who want to make education and learning as measurable as possible and those who think that education and learning cannot be measured. On the one hand outdoor educators and teachers need to prove the quality of their work to justify funding, on the other hand a culture of complexity and participation as Education for Sustainable Development is promoting requires an evaluation “that gives up the illusion of scientism and goes beyond the idea of ‘assessment’, keeping instead the idea of an evaluation as a ‘non neutral process of assigning values’”, as Michela Mayer from the ENSI network said at the second Real World Learning Conference in Planica/Slovenia in November 2013.

We could not simply decide to follow one of the approaches but decided to combine the best of the two. Alongside the development of the hand model with its five fingers and palm WG1 developed six quality criteria corresponding with the hand. The criteria and more explicitly the sub-criteria are more recommendations for reflection whereas the indicators deal with more quantifiable issues. With this list we started to evaluate the six best practice Real World Learning case studies, one from each partner country. These six case studies will be presented at the final conference where WG1 will check its evaluation results within the live presentation of the case studies and discuss their evaluation with the providers. After that WG1 will finalize their quality criteria list and recommendations.

3.2. Working Group 2

We started by exploring what we meant by ‘understanding’, coming quickly to the conclusion that it is not just all about scientific reasoning, the rational aspect of science. Although important, reason needs to sit alongside our emotions, values and humanity; this is where the true understanding emerges.

Through exploring the science that we need to understand in order to support a sustainable planet, we have used existing research on Planetary Boundaries by the Stockholm Environment Institute to frame our work. The Planetary Boundaries show the resilience of nine environmental areas, and measure whether they are currently within the planet’s capacity to sustain them. For example, biodiversity is listed as beyond the safe operating capacity, while global freshwater use remains within the safe operating capacity. We found Planetary Boundaries offer a useful approach to deciding what science needs to be understood to support a sustainable planet. But we discovered a danger of just using a reductionist based science; we try to understand the details of each boundary rather than the overall patterns and processes which link them together. And therefore we are led down the path of individual scientific solutions to global issues, rather than approaches which address social and economic issues as well as environmental ones. We concluded the need to understand the whole system that is operating, not just each individual piece of the jigsaw.

We next investigated 'system science' or holistic science by going back to nature and closely observing; we can see that nature operates through a set of interoperating principles. Fritjof Capra, from the Centre of Eco-literacy identifies seven core principles and calls these Living Systems. Working group 2, has synthesised these principles down to four that can be easily understood and integrated into outdoor science learning, change, cycles, stability and energy flow. Taking a Planetary Boundary topic such as Biodiversity Loss, we can easily apply these four principles to generate key questions that can be explored with our learner's throughout an activity.

These principles are not just natural principles which are useful as approaches to outdoor learning; they act as metaphors and frames for how we develop our communities and economies. A stable community, for example, is one which responds to feedback, realises its interdependence both internally and with the world around it, and develops its own social assets to be resilient in an ever changing world. It can be seen that these system principles are derived from nature and can be studied scientifically, but when applied to communities they become powerful metaphors for a creative, positive and sustainable future.

3.3. Working Group 3

WG3 set out originally tasked to review a range of approaches to Real World Learning and outdoor science with a focus on linking learning to behavioural change promoting action for sustainability. As WG3 members are mainly practitioners, we felt that practical experience and its impact on pupils and students is a key theme for our working group.

We realized that the understanding of factors affecting whether experience and learning are effective is very important. Furthermore, what are the factors that affect whether the programme has an impact on participants' behaviour and how it contributes to behavioural change. This topic is very broad and therefore we offer an overview of theories of behavioural change that affect our field – real world learning, environmental education leading to sustainable behaviour - to show a variety of perspectives on the topic with links to sources of information.

The main area of WG3 interest was the practical experience of our countries, outdoor learning centres and schools. Sharing of approaches and experience is always rewarding and opens new paths, a number of them are already certified, has a sophisticated methodology, were evaluated. Therefore, we prepared an overview of some successful and proven approaches to outdoor learning, which could be a way to access inspiration for outdoor learning providers and teachers.

When the RWL hand model was developed, we emphasized experience as a key element. To support the interconnection of individual components of the hand model, we looked for examples of good practice that could well illustrate the model. Therefore, we chose one best practice case study (programme, project) from each country, to show the connections among the "fingers" in the hand model.

When searching for these six illustrative programmes, we collected altogether 24 examples of good practice, which present the outdoor learning programmes and projects on scientific topics which empower learners for a sustainable present and future. They are designed to offer inspiration to readers by offering various pedagogical approaches to outdoor learning.

3.4. Working Group 4

WG4 set out originally tasked to explore 'green career competences' as the core of their work. From the beginning it became very clear that to explore 'competences' meant to consider not only skills and knowledge, but also to engage with values. It was also found that by bringing together these elements of competences in the sustainability

context means to empower people to be able to think and act sustainably. It is from this initial work that WG4's work became orientated around the two interconnected areas of 'values' and 'empowerment'.

Values

As a basis for their work with values WG4 used the Common Cause Handbook (Holmes *et al* 2011), a publication written by the Public Interest Research Centre, a UK NGO focused on supporting the growth of a sustainable society. The Common Cause brings together peer reviewed global research on values, frames and goals into an accessible handbook to help organisations and individuals understand and work with values. This publication was chosen due to its highly accessible and applicable nature, for its strong basis in global research, and for the level of supporting materials available for work within the project. This publication and the use of the literature directly, gave a strong foundation for the workshops and their findings that WG4 have delivered and gathered. The term 'self-transcendence values' has been used in the model to provide continuity between the literature and the work of the RWL Network, highlighting the importance of promoting values that support bigger-than-self thinking and action through learning for sustainability. It is recognised that the values research outlined in the Common Cause is not the only work on universal values, however it is widely used internationally which makes it very suitable for this project.

Empowerment

The term 'empowerment' is used in the model in place of 'competences' to give a strong positive emphasis to the place of the learner at the centre of the learning experience. It underlines the utmost importance in not only giving them the skills and knowledge to deal with an uncertain future, but to give them ownership of their learning and the belief and motivation to play an active and important part in a sustainable present and future.

In order to offer a comprehensive overview the development of our green career competences list drew on the analysis of existing lists, interviews with experts and consultation of outdoor learning professionals through workshops and conferences. Despite this rigorous work we would like to emphasise that the resulting list is just one way to access inspiration for empowering learners for a sustainable present and future.

Competences in this context, following Woodland and Winstanley (1998), are understood to mean *"the skills, knowledge and understanding, qualities and attributes, sets of values, beliefs and attitudes which lead to effective performance in a given context, situation or role"*. When considered with relation to sustainability 'effective performance in a given context, situation or role' refers to the learner's role as a global citizen, acting with respect for themselves, those around them and the planet as a whole (strongly connected to values). The 'context, situation or role' refers to all areas of the learner's life, including their participation in a 'green' economic system; a system that embraces a systems approach.

A range of green career profiles were developed to help exemplify how a 'green economy' can include any jobs in which green career competences and values are employed. They are designed to offer inspiration to the reader by offering a breadth of career background from across Europe.

3.5. Core Group

Frames

Values, as well as influencing our behaviours and attitudes, are connected to the way we understand the world. One way this connection manifests itself is through frames (Holmes *et al* 2011). It is for this reason, the understanding that frames act as the vehicle for embedding values structures in our thinking and behaviour, that they have been included as a core element of this model. They play a challenging but essential role, raising up all the other aspects of the model in terms of the overall effectiveness of this approach to learning for sustainability.

Why do frames play such an important role in learning? Neuroscience has shown that we tend to think metaphorically (Lakoff & Johnson 1980), and that we learn much more through stories than by facts (Spitzer 2009). We remember frames that condense these stories. In this way it can be said that frames literally structure how we think. They become the defaults with which we understand the world.

The more frequently any given frame is activated, the more deeply it becomes ingrained. Also the stronger these associations become, the more they reinforce the thinking and behaviours that go with it. It is not easy to establish frames, but as soon as they are established, it is even harder to change them.

Frames can be mental shortcuts for some learners, while for others, if the frames are well developed, they can help to build up new meaning (Cachellin & Ruddell 2013). This last observation is very relevant in terms of the question related to how we shape our common future (Lakoff 2008).

Transferability

We took the educational term transfer and developed it to support learning for sustainability. We emphasise transferability in our model to underline the importance of the connection between the different areas of life during learning for sustainability. Transferring experiences, understanding, empowerment and values from one area of life - e.g. one's personal life - into another - e.g. global society - supports the deepening of the learning experience and learning for sustainability. Transferring knowledge into different areas of life can connect learners more emotionally with the learning.

We think that learning in different areas of life enhances the chance of transferring the experience of the learning into the learners own actions, because it anchors the experiences into their own lives. The Professional Standards for teachers in Scotland already ask for such an approach: They highlight the need for teachers to “connect learners to their dependence on the natural world and to develop their sense of belonging both to the local and global community”, as well as to “engage with the ways in which natural, social, cultural, political and economic systems function and are interconnected” (Teaching Council for Scotland 2012:10).

Chapter 4 – Conclusions and recommendations

4.1. Working Group 1

Conclusions:

- Although nobody would deny the importance of learning through real life experience, learning outside the classroom has become more difficult to realise in recent years following a focus on technical, engineering science and economic education and also because of schools' health and safety concerns.
- Awareness of the complex and dynamic processes in nature and in society at both local and global levels, as well as the unpredictability of future development, creates the need for an evaluation of education that reflects and supports an open and continuous learning process and the empowerment of learners to deal with uncertainties.
- "A culture of complexity and participation requires an evaluation that takes into account this complexity: an evaluation that gives up the illusion of scientism and goes beyond the idea of 'assessment', keeping instead the idea of an evaluation as a 'non neutral process of assigning values'" (Michela Mayer at the RWL conference in Planica/Slovenia, November 2013).
- Educational evaluation faces an increasing demand for quality caused by the need to establish parameters for a market competition between educational offers, the need to control public funding, the need to support educational innovation on the one hand and the development of inclusion, equity and participation on the other and the need for educational institutions to adapt to the complexity of sustainable development.
- In our working group we faced different approaches to evaluation: A "Positivist Approach" that defines evaluation as a measurement along defined criteria which are made operational by indicators. These indicators help to quantify educational results and to guarantee objectivity. The "Relativistic Approach" focuses on different perspectives brought out through dialogue and observation in a qualitative-based process of evaluation. With the set of RWL quality criteria and indicators we tried to bring together these two approaches: The criteria should help to reflect on different perspectives regarding how to deliver education that leads to action for sustainability. The indicators are helpful to quantify the steps that have been undertaken in planning and delivering educational programmes that lead to sustainable actions.

Recommendations:

- Providers of outdoor education and school teachers should understand their educational activities as an attempt to provoke behaviour change and as a part of a lifelong learning process to empower learners to face the complexity and uncertainty of a rapidly changing world.
- The RWL quality criteria and the corresponding RWL hand model are a reflection tool and an open check list for providers and teachers to support them to enhance the quality of their teaching. They are not rules to be obeyed, nor are they intended to prescribe any particular style or content of education programme.
- As quality is a value based and cultural characteristic that depends on partly unconscious emotional frames, providers should be aware of that when designing educational programmes and reflecting on them. Open, participative and process-oriented education offers space for developing competences, reflecting on personal and cultural values and frames and how they link to sustainable action.
- The RWL quality criteria, sub-criteria and indicators, as well as the RWL hand model, are just a starting point to a discussion on the further development of education. According to the complexity, dynamics and uncertainties in the real world around us and increasing requirements of teachers and educational

providers to “prepare” students to face this world we need “dynamic qualities” in combination with defined standards.

4.2. Working Group 2

1. **Holistic Science:** A reductionist explanation of nature is not only incomplete, it can also be dangerous. It leads us to assume that by analysing the ‘mechanical’ workings of nature we can predict and hence manipulate it. Reductionist science constructs simplified models of reality but ignores the ecological context, complexity, emergent properties and intrinsic value of life; it cannot capture the whole story. Holistic science advocates a participatory science of qualities, values and interactions which underpins an ecological world view. This approach is more capable than traditional science of relating to the problems of environmental degradation, spiritual decline and collapsing communities that face humanity today. This is also an approach which integrates with the findings of the RWL model and demonstrates how science can be a way towards behaviour change for sustainability.
2. **Science competency is variable:** the quality of science teaching and the understanding of providers are very variable across Europe. Whereas science teachers in schools have a good traditional understanding of science, educators from outdoor centres have a much lower competency. Both groups have a lack of holistic science understanding. This deficit needs to be addressed.
3. **Science education and environmental education:** there needs to be a greater focus on integrating science education and environmental education. Science education focuses on understanding whilst environmental education on values and behaviour. Both need to link in harmony if sustainability is to be the goal.

Recommendations:

1. Science curriculums need to move towards a more holistic understanding of science rather than a traditional reductionist model. **Curriculum design models** are needed to integrate holistic science into existing curricula at all levels and show how new curricula can be developed from the beginning.
2. Successful science teaching includes values, attitudes and perspectives and environmental education is lacking in scientific understanding. **Methods and examples** of integrating holistic science into current environmental education activities are needed.
3. There is a huge need for **new resources** which build on traditional reductionist science activities, making the links with the big science concepts and further transferring these to a range of different contexts within the learner’s experience.
4. Taking learning outside requires teachers and providers to adopt new skills and pedagogies to be successful. Just teaching outdoors is not enough. Professional development needs to provide progressive support for teachers and providers to adapt their teaching to the outdoors (style and pedagogy), and to enable them to design their own curricula and activities. The aim is to change the mindset of teachers and providers towards teaching outdoors. There is a need for **quality teacher and practitioner training** to integrate holistic science within an outdoor curriculum.
5. Science should be taught with a strong reference to the local context, then expanded to embrace the whole of the Earth. Local examples should be used when teaching about global issues; start with what you can see in front of you. There is a need to provide **methods and examples of linking local with global** to enhance the transferability and behaviour modifications of learners.

4.3. Working Group 3

“Science can only describe a flowering cherry tree; it cannot help us experience the cherry tree in its totality. To develop love and concern for the earth, we need deep, absorbing nature experiences; otherwise, our relationship with nature will remain distant and abstract and never touch us deeply.” (Cornell, 2011)

In our understanding, real experience in outdoor setting is critical in terms of learning for sustainability. If people are to develop a love and concern for the earth, they need these direct experiences; otherwise, their knowing remains remote and theoretical and never touches them deeply (Cornell, 1998). No other understanding is deeper and more durable than what we experience fully, e.g. with the help of all of our senses, from the moments we are immersed by the real-life situation we have to deal with.

Supporting experience which leads towards sustainable behaviour:

- Educators have the unique opportunity to challenge and develop peoples' attitudes towards nature and environmental issues via direct contact with the environment and various kinds of sensory activities. It is the way to develop environmental sensitivity of pupils and promote their love of nature. Direct, repeated, and positive experiences from being outdoors play an important role for developing environmental sensitivity and because of this, it is crucial to help pupils to touch, see, and listen to the voice of nature in a safe, pleasant way (Bögeholz, 2006, Chawla, 1998, 1999, Palmer et al., 1998, 1999, Vadala et al., 2007).
- Educators should allow children to have the freedom to explore and develop their physical boundaries, to take risks and to discover the real world with all their senses. It may be also very effective for learning real-life phenomena and effective way of learning/teaching that is exactly how humans tried to learn more about themselves and world around themselves. They gained their knowledge from the surrounding nature and also from their own communities.
- Pupils should be provided by an opportunity to deal with the issue – to do their own action and to see a change. For education for sustainable development, it is crucial that people believe they can really make a difference, e.g. they know what to do and how to do with a challenging issue. It is an opportunity for teachers: we may help pupils to test, evaluate and modify their action theories for managing the tasks of an increasing difficulty and as a result, promote their belief they are capable to bring a change, competent for an a needed action.
- To help learning by the experience, variety of methods can be used. A 'good learning' includes varying combinations of knowledge and understanding; skills; creativity, inspiration, enjoyment and fun; behavioural change and progression; attitudes and values. When educators draw from a richness of methods and strategies, they also respect diversity of learning styles and individual experience of our pupils. Whatever methods we use, pupils should find new experience relevant for their personal lives.

Supporting pro-environmental behaviour:

The question of what factors influence pro-environmental behaviour has been studied for more than forty years in the context of psychology, sociology or environmental education. In spite of many uncertainties, it is clear that some strategies bring positive results and some do not. We may consider following this list of brief recommendations (Cincera, 2013):

- Awareness-based strategies may increase understanding of environmental issues but they often lead to apathy and hopelessness. If it is possible, EE programmes should be action-based, e.g. provide the opportunity to change something and see the effect in the real world.
- The role of attitudes is still discussed. However, increasing environmental sensitivity of young pupils might be a precondition of their future interest in responsible environmental behaviour.

- Subjective norms play important roles in our decisions to do something or not. Community-based programmes seem to be more effective strategies than individualistic approaches (McKenzie-Mohr, Schultz, Lee, & Kotler, 2012).
- Some types of behaviour, like recycling, not littering, etc., might be developed in early childhood to become routine. However, broad social consent is needed.
- Pupils should not be forced towards pro-environmental behaviour. To develop competences for dealing with complex scenarios might be a more appropriate response to environmental crisis than to develop skills suitable for just a specific area.

4.4. Working Group 4

In order that both local and global societies can move toward a truly sustainable future (a way of being that is within the planetary boundaries) the citizens of these societies need to be empowered to learn, think and act in a sustainable way.

Empowerment brings the learners to the centre of the learning experience: it's about recognising and realising their own humanity and their own ability to take action for positive change.

Values form the foundation for our thinking and actions, and are therefore inseparable from empowerment and should be considered in all aspects of education. Learning in authentic real world settings offers highly valuable opportunities to develop these areas, which collectively can be called competences for sustainability.

Supporting 'Green Career' development:

Through developing a 'green careers' competences list the Real World Learning partners have in the process tackled the widely used concept of 'green jobs'. In this context the term 'green careers' has been adopted; understood to reach far beyond the narrow view of jobs in the 'green sector', recognising the possibility for all people to develop their thinking and action for sustainability in their working lives. This is exemplified in the 'Green Career Profiles' and supported in more detail in the Green Career Competences list.

Promoting values for sustainability:

Values form the basis for all of our thinking and action, therefore with respects to learning for sustainability it is essential that we engage with and understand what values are and how they work. The research and our workshop findings highlight the need to promote values that lead to beyond-self thinking and action (self-transcendence values) and support independent thought and action (self-direction values). The results also highlight the need to be mindful of inadvertently promoting values that lead to unsustainable thinking and action (such as power and achievement – self-enhancement values).

Recommendations:

1. Educators take on the role of a facilitator, offering learners empowering experiences in the real world that allow them to develop green career competences and learn in as self-directed a way as possible.
2. Learners should be engaged with career opportunities throughout their learning, linking their learning for sustainability with future green careers within any sector. Where possible this should include interacting with authentic actors in the 'green economy'.
3. Educators should have an understanding of what values are and how they work in order that they can effectively place self-transcendence and self-direction values at the core of their outdoor learning for sustainability practice. This will require training and support.
4. Educators must keep in mind that how they model sustainability in their own behaviour has equal, if not more, educational impact than their educational activities. This must come through authentically in the

values that they embody. This will require a lot of self reflection on the part of the educator and perhaps also an open process of co-learning with the learners.

5. Educators are encouraged to engage themselves and their learners in understanding the implications of the current societal dominance of unsustainable self-enhancement values.

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