Schools for Resilience

Linking schools with
local communities' sustainability

WP2: Schools for Resilience Methodology

1 Schools for Resilience Methodology

A process methodology defines the stages through which learning takes place, providing a structure into which the learning fits. A process is not a specific pedagogical approach or learning model. The Schools for Resilience process methodology is based on a cyclical journey. A key characteristic of resilience is the ability to bounce back after a shock; the cyclical model reflects this.

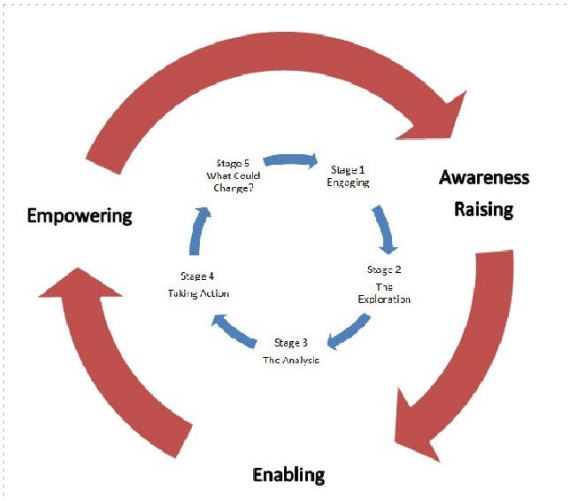
1. **Engaging** – what matters to young people? What are their concerns? How are these connected and interlinked with the needs of their community, region, country, planet? What do we appreciate about our community?

2. T**he Exploration** – action research into an issue identified in step 1.

3. **The Analysis** – are there solutions that work for you, what do you want to change, can you carry out this change, who else needs to be involved? Planning action with the community.

4. **Taking action** – undertaking a local resilience intervention involving the community.

5. **What Could Change** – Reflecting on what we have done, what worked well, what will we do differently next time, what do we want to tell others, what do we want to do next? Will things be the same in the future, why might it change, and what will the next challenge be?



This cyclical journey can have the effect of raising learner's awareness of their sense of place; enabling participants to understand how their community works; and empowering participants to rethink their own place within their community. At each stage of the journey the participants engage in different ways as described in the table below.

Stage	Learner	Learner Progression	Teacher	Activity Designer	Relationship with SfR Model
Engaging (engaging learners' interest)	Learner explores what they value[1], relationships with their community and how personal and community needs are interlinked.	Understands what has value to them and sees this within the context of their community and the needs of their community.	Plays role in initiating and facilitating work; helps learners explore their values and community.	Creates open activities that encourage reflection on learner's values and how those values can be actualized within their community.	Focus on values and frames
Exploration (exploring a topic of interest)	Engages with community to explore issue of interest. Learner seeks a greater understanding and range of views with community.	Expands their view of 'community' and see the relationships & systems present.	Facilitation role in supporting learners through appropriate methodology to explore selected issue.	A range of specific approaches to exploring an issue in the community using participatory techniques.	Focus on understanding
Analysis (reaching conclusions)	Reflects on results of exploration: considers what action to take to address issues explored above.	Move towards a more participative, relational, view of community and their place and role as part of it.	Teacher role to support learner to analyse selected issue.	Formulating provocative questions and analysis tools to explore findings from above.	Focus on understanding, transferability and empowerment contextualized with values and frames
Taking action (carrying out a local action project)	Undertaking a local resilience action in and with the community.	Views themselves as part of community and how actions benefit all.	Teacher's role to facilitate action, ensuring learner safely and appropriateness of activities.	Planning tools for turning ideas into action.	Focus on empowerment
What Could Change? (looking to the future)	Reflecting on the results of their action: what worked, what they will do differently next time, how to tell others about their results. What future challenges will they need to address?	Learner comes into a new relationship between their own desires and the community around them.	Helps student to envision their future and accept change as normal.	Activities for communicating sucess and reflecting on results; visioning the future and what new challenges might arise.	Focus on values.

1 – by value we mean something which is of importance. 2 – action can be physical, behavioural or thought based.

In the table below, we present how the stages of the SfR methodology fits with different activities identified in the PBL case studies identified in the different country partners.

Stage	Sample activity from PBL case studies
Engaging (engaging learners' interest)	*Learner explores what they value, relationships with their community and how personal and community needs are interlinked.* Students in Latvia brainstormed about their local river – what do they know about their local river and what interests them? This lead to groups of students identifying an issue they find relevant. Three additional questions helped students further clarify their issue: what does this issue mean for me; what does this mean for my community; what does this mean for Latvia, Europe, the world? Based on their results, students then devise a plan to explore their chosen topic of interest in more detail (from 'River Tells me a Story' – Latvia). In Spain students wanted to know if farming practices are environmentally friendly. They started their work by developing a questionnaire to ask local farmers and families about their farming practices. Based on the results they were then able to explore the subject in more detail (from 'Leaving the Classroom'- Spain).
Exploration (exploring a topic of interest)	*Engages with community to explore issue of interest. Learner seeks a greater understanding and range of views with community.* An Italian school invited external experts to talk with their students about the interaction between the school and surrounding environment. They then collected data about the energy use and waste production in their school so they could calculate the environmental impact the school has on the surrounding environment (from 'Energy Budget and Environmental Impact' – Italy). In Ireland the Eco-Beo project developed a number of distinct modules delivered by experts. Through these and field trips, students learnt explored the natural history of their area (from 'Eco-Beo' – Ireland).
Analysis (reaching conclusions)	*Reflects on results of exploration: considers what action to take to address issues explored above.*
Taking action (carrying out a local action project)	*Undertaking a local resilience action in and with the community.* In Ireland students analysis the results of their exploration and develop their own project, allowing them to self-direct their learning (from 'Eco-Beo' – Ireland). In Italy, after analyzing the results of their environmental surveys, students presented the results to their town Mayor and the students taking their own actions to reduce energy use at school (from 'Energy Budget and Environmental Impact' – Italy).
What Could	*Reflecting on the results of their action: what worked, what they will do*

Change? (looking to the future)	*differently next time, how to tell others about their results. What future challenges will they need to address?*

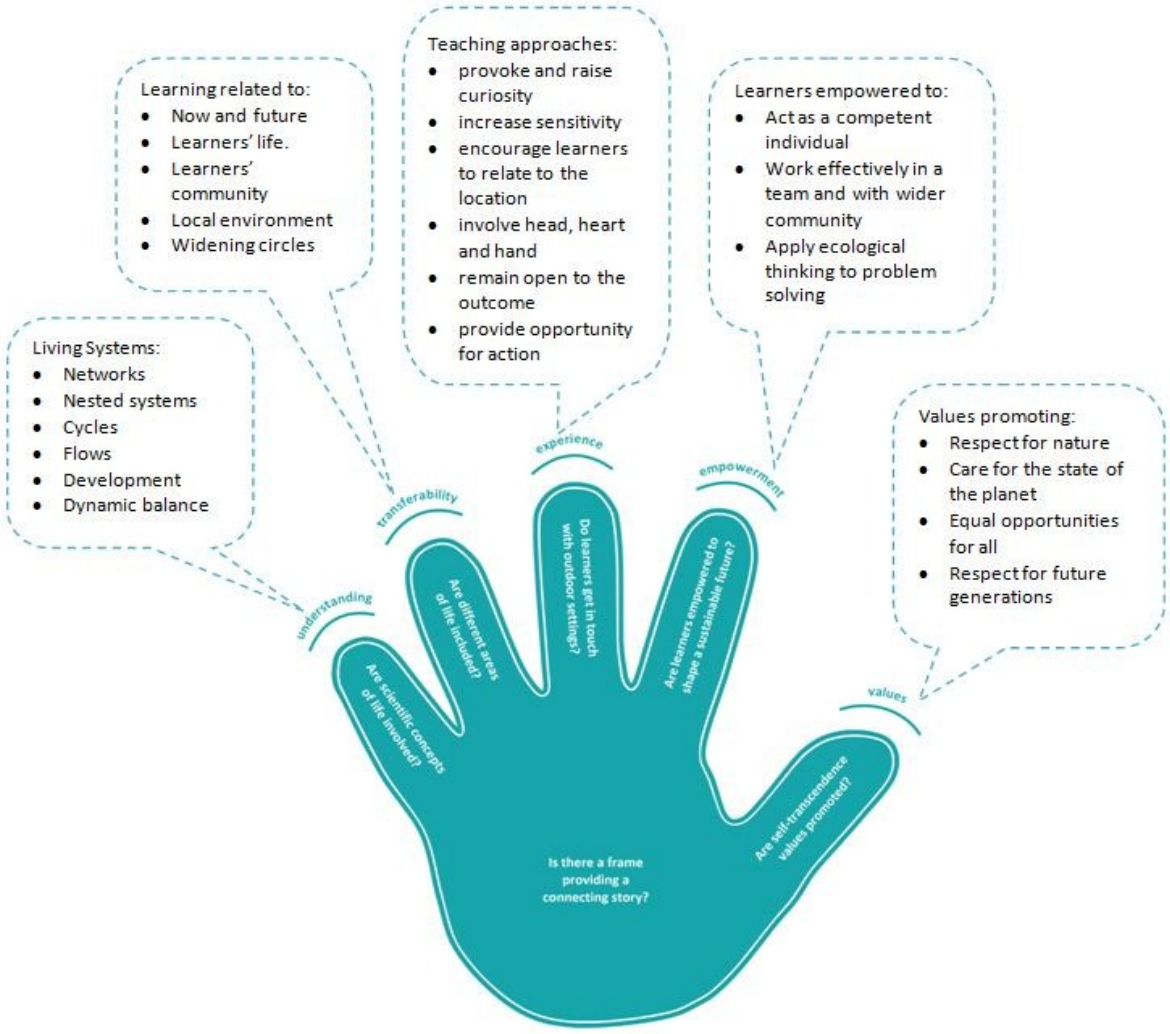
2 Schools for Resilience Model

Allied with the process methodology a learning model is needed upon which to build activities in the Schools for Resilience programme. Based on outdoor learning for sustainability research carried out by the Real World Learning Network[1], we reviewed their model and adapted to the needs of Schools for Resilience. The model has six key elements:

1. Understanding – this is the knowledge learners need to think and act resiliently.
2. Transferability – ensuring that activities explore a range of geographical and human contexts.
3. Experience – the pedagogies used in delivering learning.
4. Empowerment – competences learners gain in order to take effective action.
5. Values – the values which promote resilience.
6. Frame – a familiar narrative that makes the learning meaningful to the learners.

A more detailed description can be found in Annex 2.

1 *www.rwlentwork.org*



This model is adapted from research carried out by the Real World Learning Network to deliver learning which leads to behaviour change for sustainability. Behind each of the fingers greater depth can be added. Annex 5 shows a greater depth of competences for empowerment and Annex 4 more details on values by way of illustration. Annex 5 provides more details on living systems.

The design of SfR activities will need to promote the elements of the model so that learners develop the ability to think and act resiliently. It is not expected that the elements of the model fit every activity, but are delivered over the learning journey outlined in the methodology section above.

Finally, SfR aims to promote a shift in teaching from traditional ESD to a more proactive rethinking of how individuals and communities become and act resiliently. The table below suggests that most ESD does not challenge traditional models of how the world works (ESD 1); more progressive ESD 2 starts to critically question the action we are taking to become sustainable but without questioning the world-view within which these actions take place. Third order learning (ESD 3) questions the world-view upon which our assumptions lie. SfR lies somewhere between ESD 2 and ESD 3.

First Order Learning - ESD 1 Promoting / facilitating changes in what we do and how we live

Learning **for** sustainable development

- ♣ Promoting informed skilled behaviours, shifts in habit, and ways of thinking, where the need for this is clearly identified and agreed.

ESD 1 is important for two reasons:

1. there are clear benefits to organisations, families, and individuals to be had in the short term, as well as wider environmental and social benefits.
2. we just have to do the obvious things – for example, there are few good arguments against insulating roofs.

ESD 1 takes place within accepted boundaries; it is adaptive learning which that leaves basic values unexamined and unchanged. Most learning institutions are engaged in this functional, first order learning where the stress is on information.

Second Order Learning - ESD 2 Enabling / realising sustainable living

Learning **as** sustainable development

- ♣ building capacity to think critically about – and beyond – what experts say, and to test out sustainable development ideas.

ESD 2 involves the development of learners' abilities to make sound choices in the face of the inherent complexity and uncertainty of the future. Second-order change is concerned with *doing better things*, that is, it raises questions of purpose and values; it asks 'efficiency and effectiveness in the service of what? Or to what end?' Such change involves bringing the assumptions to light that underlie first order learning, and critically assessing them, invoking questions of values and ethics.

Third Order Learning - ESD 3 Transforming worldviews

At a deeper level still, ESD 3 is when we are able to see things differently; it involves a deep awareness of alternative worldviews and doing things differently. The learner participates in a creative re-visioning of society from its core values.

Annex 1 – Six Elements of Schools for Resilience Model

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 such as *'all taking requires giving back'* ensures that values, empowerment, experience, transferability and understanding are connected, leading to a deeper sustainability learning experience.

Are self-transcendence values promoted?

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.

Are learners empowered to shape a sustainable future?

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.

Do learners get in touch with outdoor settings?

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 recognising that they are a part of a bigger system. This intensity of experience is held and lifted by the other aspects of the model.

Are different areas of life included?

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.

Are scientific concepts of life involved?

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 communities in this holistic way develops thinking and action for sustainability.

Annex 2 – Values and the Schools for Resilience Model

If we can raise-up those values that promote sustainable ways of thinking and being through our work then we are on the right path. To help in this practice three core values have been suggested to focus our thinking:

Respect for nature and care for the state of our planet

This recognises the core universalism values that relate to nature, with the goal of preserving the natural environment (Schwartz *et al* 2012). This includes recognising and understanding our place as a part of nature (unity with nature), our role in thinking and acting with respect for the welfare of the natural environment (protect the environment) and appreciating the diversity and wonder of the natural world (world of beauty).

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. This encompasses areas of universalism (broadmindedness, wisdom, equality for all, social justice and a world at peace) and benevolence (honesty, helpfulness and forgivefulness).

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. This connects with the need for respect that arises from both universalism (protecting the environment and equality for all) and benevolence (helpful - working for the welfare of others) values.

If, as facilitators of outdoor learning, we can keep these values in mind - embodying and promoting them through our planning, delivery and evaluation - then we will be setting a strong foundation for learning for sustainability.

More information about values is available at:

- Common Cause Handbook – a guide to values for educators, politicians and everyone in between.
- An overview of the Schwartz Theory of Basic Values – an article overview for educators.

Annex 3 – Living Systems and the Schools for Resilience Model

Creating communities that are compatible with nature's processes for sustaining life requires basic ecological knowledge.

We need, says Center for Ecoliteracy cofounder Fritjof Capra, to teach our children — and our political and corporate leaders — fundamental facts of life:

- Matter cycles continually through the web of life.
- Most of the energy driving the ecological cycles flows from the sun.
- Diversity assures resilience.
- One species' waste is another species' food.
- Life did not take over the planet by combat but by networking.

NATURE'S PATTERNS AND PROCESSES
Understanding these facts arises from understanding the patterns and processes by which nature sustains life. In its work with teachers and schools, the Center for Ecoliteracy has identified several of the most important of these. It has helped teachers identify places in the curriculum where students can learn about them.

They include networks, nested systems, cycles, flows, development, and dynamic balance.

Networks
All living things in an ecosystem are interconnected through networks of relationship. They depend on this web of life to survive. For example: In a garden, a network of pollinators promotes genetic diversity; plants, in turn, provide nectar and pollen to the pollinators.

Nested Systems
Nature is made up of systems that are nested within systems. Each individual system is an integrated whole and—at the same time — part of larger systems. Changes within a system can affect the sustainability of the systems that are nested within it as well as the larger systems in which it exists. For example: Cells are nested within organs within organisms within ecosystems.

Cycles
Members of an ecological community depend on the exchange of resources in continual cycles. Cycles within an ecosystem intersect with larger regional and global cycles. For example: Water cycles through a garden and is also part of the global water cycle.

Flows
Each organism needs a continual flow of energy to stay alive. The constant flow of energy from the sun to Earth sustains life and drives most ecological cycles. For example: Energy flows through a food web when a plant converts the sun's energy through photosynthesis, a mouse eats the plant, a snake eats the

mouse, and a hawk eats the snake. In each transfer, some energy is lost as heat, requiring an ongoing energy flow into the system.

Development

All life — from individual organisms to species to ecosystems — changes over time. Individuals develop and learn, species adapt and evolve, and organisms in ecosystems coevolve. For example: Hummingbirds and honeysuckle flowers have developed in ways that benefit each other; the hummingbird's color vision and slender bill coincide with the colors and shapes of the flowers.

Dynamic Balance

Ecological communities act as feedback loops, so that the community maintains a relatively steady state that also has continual fluctuations. This dynamic balance provides resiliency in the face of ecosystem change. For example: Ladybugs in a garden eat aphids. When the aphid population falls, some ladybugs die off, which permits the aphid population to rise again, which supports more ladybugs. The populations of the individual species rise and fall, but balance within the system allows them to thrive together.

See also http://www.ecoliteracy.org/essays/systems-thinking

Annex 4 – Competencies and Schools for Resilience

From a larger list we have created here the resilience knowledge, skills, and qualities that an individual needs to play a part in their community's resilience.

- Have adaptive and coping skills
- Be capable of self-direction
- Be able to communicate well and problem-solve with others
- Have the ability to take a whole system perspective and be able to see the bigger picture
- Have a strong sense of place
- Have ecological literacy and an understanding of the challenges we face
- Have an understanding of community values
- Being able to appreciate the resources and the assets of the community

The table below shows how the SfR competences support delivery of the EU Transversal Competencies.

Communication	Has the ability to express and understand concepts, ecological relations, technical feasibility, social conditions, values and attitudes and on this basis participate in (collection) constructive discussions with others with the aim of developing local resilience solutions
Science and technology	Has the ability to apply the knowledge, skills and methods in holistic science and technology to analyze the resilience challenges a specific community are facing and come up with local adaptive interventions.
Learning to learn	Has the ability to pursue and persist in learning, ie. organize one's own learning on the basis of prior knowledge and experiences and identify one's own needs for acquiring new knowledge and skills including through proper management of time and information, both individually and in groups to solve the challenges one encounter.
Civic competences	Has the ability, based on the insight of the knowledge of the concepts of democracy and citizenship, to engage in local cooperative challenges and take responsibility for one's own and common solutions and actions
Initiative and entrepreneurship	Has the ability to develop new ideas, projects and solutions and transform them into action in relation to the resilience challenges the community is facing, relying on creativity, innovation and risk-taking,