



Teaching Nature

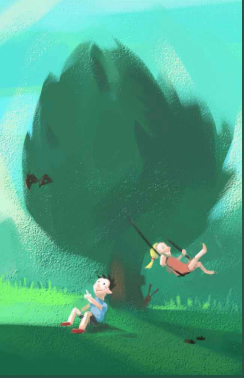
Exploring the Relationships between
Outdoor Learning and Sustainability
Education

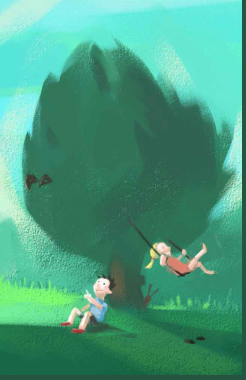
christiana.glettler@pph-augustinum.at

Prologue

“And that’s just a value that’s really important to me. Taking responsibility for my environment and, in doing so, keeping sustainability in mind. Really thinking about what my life should look like in the future so that nature can thrive alongside me. It’s not just about me being the most important thing—the environment is important too.”

(SHE2 Transcript, Paragraph18).





Outdoor Learning



ESD



Research Questions

- ◇ How do children interact during outdoor activities?
- ◇ To what extent do the educational principles and actual educational practices in the institutions studied align with the ESD goals?
- ◇ To what extent do children demonstrate competencies that correspond to the ESD goals?
- ◇ In the context of ESD, how do educators describe the competencies of their children?



ESD

Child & Nature

Competence models in ESD

Implications for
daily practice

ESD

ESD

Case Study
Elementary education

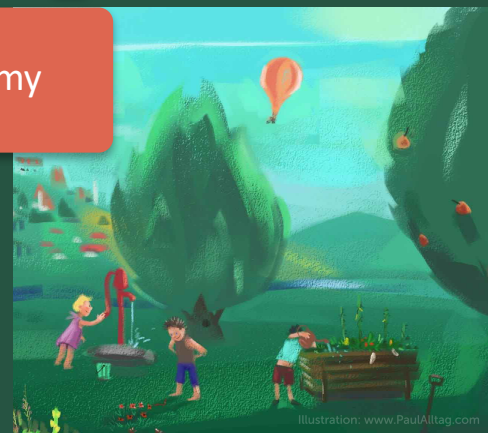
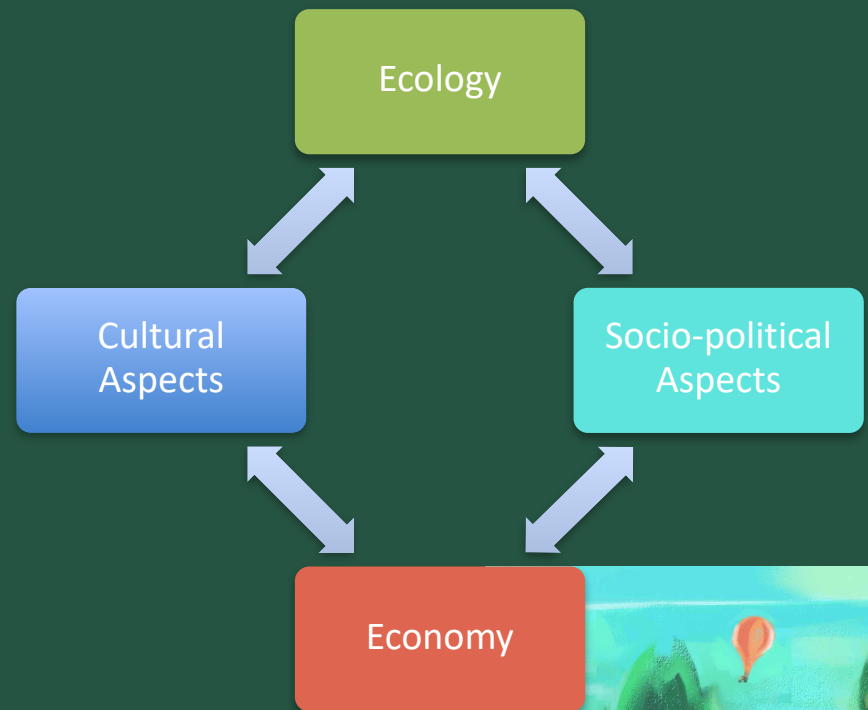
Case Study
Primary Education

ESD

Sustainable Development

Two central thoughts from the Brundtlandreport “Our Common Future”, (WCED, 1987):

- “Sustainable development aims to **promote harmony among human beings and between humanity and nature**” (WCED, 1987, Chapter 2, paragraph 81).
- “Humanity has the ability to make development sustainable to ensure that it **meets the needs of the present without compromising the ability of future generations to meet their own needs**” (WCED, 1987, Part 1, paragraph 27).



The sustainable Doughnut



Figure 2.2: A safe and just space for humanity (Raworth, 2012, p. 4)





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS



Inner Development Goals



Being

Cultivating Our Inner Life

Inner Compass

Integrity & Authenticity

Openness & Learning Mindset

Self-Awareness

Presence



Thinking

Understanding Our Complex World

Critical Thinking

Perspective Skills

Systems Thinking

Long-term Orientation & Visioning

Creativity



Relating

Caring for Others and the World

Appreciation

Connectedness

Humility

Empathy & Compassion

Forgiveness



Collaborating

Building Trust and Working Together

Relationship-Building Skills

Inclusive Mindset & Intercultural Competence

Co-creation Skills

Communication Skills

Mobilization Skills



Acting

Leading and Enabling Change

Courage

Hope & Optimism

Conscious Use of Resources

Proactivity

Resilience



One definition of ESD...


“...aims for a comprehensive, forward-looking approach to education with the goal of enabling current and future generations to live together in peace and solidarity, enjoying freedom, prosperity, and an environment worth living in. This is based on humanistic educational ideals as well as critical reflection on the realities of life and societal conditions. Individual responsibility and maturity play a central role in this.”

“ (BMWF et al. 2008 , S.7)





Concepts, Content, Principles

- Focus on complex problems
 - Promotion of future-oriented knowledge and skills that empower children and young people to participate
 - Real-life topics such as water, consumption, nutrition, health...
 - Teaching values
 - Children as “active agents” in their learning processes
 - Learning as “making sense of the world,” with a strong focus on informal learning
 - Process orientation and emphasis on the social context
 - Deep understanding of nature (Stoltenberg, 2008,2009, 2011c)
- 



Deep understanding of nature

(Stoltenberg, 2011c)

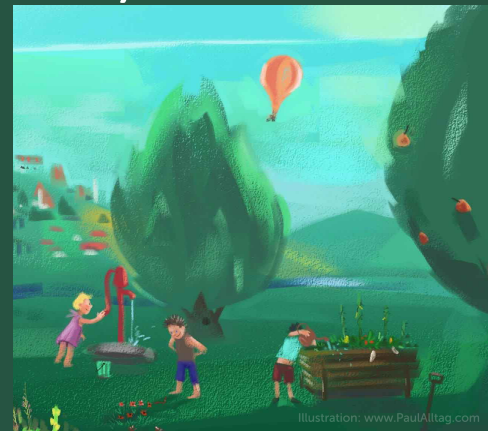
- Nature moves us with its beauty, colours, shapes, and stimulating changes.
- Nature is our habitat.
- Nature provides us with the resources we need to meet all our basic needs. These resources are limited.
- Nature ensures the foundations of human life in the form of water supply, air quality, and much more.
- Nature functions on the basis of a delicate balance that follows its own laws —> rhythms, interconnections within the ecosystem... We must understand and respect these laws.
- Humans are part of nature.

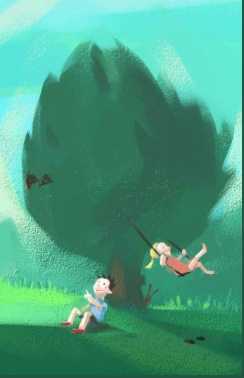


Competences

Definition according to Weinert (2014):

“... the cognitive abilities and skills that individuals possess or can acquire to solve specific problems, as well as the associated motivational, volitional, and social dispositions and abilities required to apply these problem-solving skills successfully and responsibly in a variety of situations.” (p. 28)





Comparison of OECD competences (2005) and shaping competence, from: de Haan, 2009: p. 32

Shaping Competence

... is the ability “to actively shape and influence the future of the communities in which we live, with a view to sustainable development” (de Haan & Harenberg, 1999)

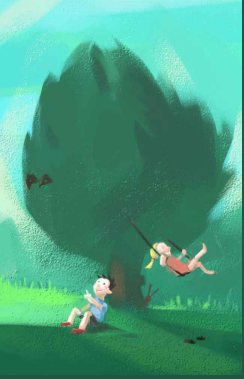
Competences OECD	Subcompetences of shaping competence
Interactive use of media and tools	T.1 Building knowledge with an open mind and by integrating new perspectives
	T.2 Thinking and acting with foresight
	T.3 Gaining insights and taking action through interdisciplinary approaches
Interacting in heterogeneous groups	G.1 Be able to plan and act in collaboration with others
	G.2 Be able to participate in decision-making processes
	G.3 Be able to motivate others to take action
Acting independently	E.1 Be able to reflect on one’s own values and those of others
	E.2 Be able to plan and act independently
	E.3 Be able to demonstrate empathy and solidarity toward the disadvantaged
	E.4 Be able to motivate oneself to take action



Shaping competence for primary education

(de Haan & Plesse, 2008)

- Think ahead
- Be open-minded
- Work across disciplines
- Communicate and cooperate
- Plan and take action
- Act with fairness and solidarity
- Be motivated and inspire others
- Reflect on lifestyle and guiding principles





Children and Nature

Children benefit from spending time in nature in many ways:

- Social development: play behavior, conflict resolution skills, judgment, ability to cooperate... (Chawla, 2002; Dymont, 2005; Dymont & Bell, 2008a; Palmberg & Kuru, 2000; Stoltenberg, 2009)
- Psychological and cognitive development: self-competence, subject-specific competence (Raith & Lude, 2014; Gebhard, 2013; Dolasse, 2012)
- Physical/motor development (Miklitz, 2005; Bolay & Reichle, 2011; Gebhard, 2013)
- General health promotion (Lovasi et al., 2008; Park et al., 2011; Corraliza, Collado & Bethelmy, 2012)
- Environmental awareness (Raith & Lude, 2014; Meske, 2011; Bögeholz, 1999; Lude, 2001)

Development of Environmental awareness

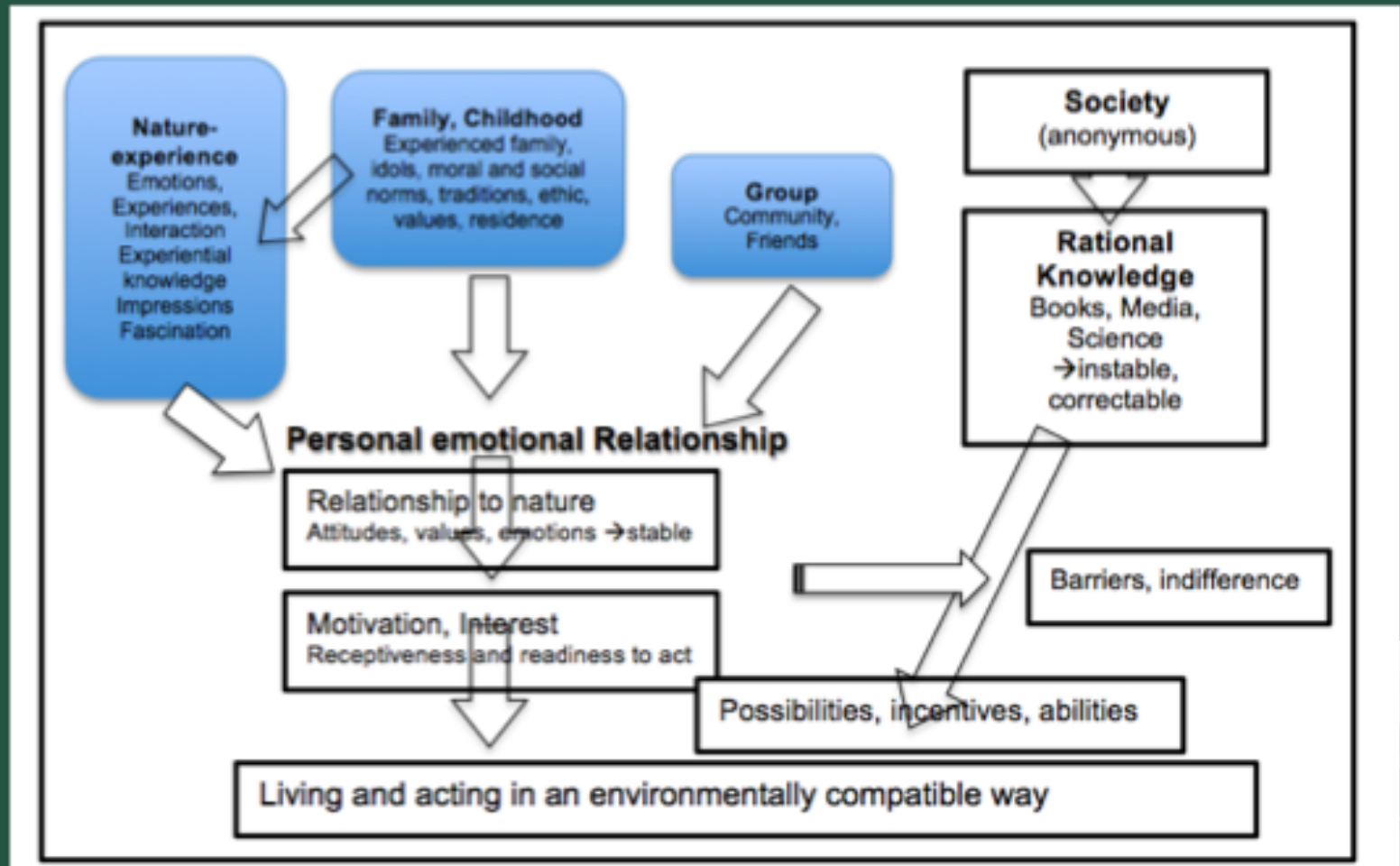


Figure 4.3.: The influences of different factors on nature-related values and pro-environmental action (slightly adapted and translated from Jung, 2012, p. 131)



Case description



Case 1 Private Primary School

- 1st and 2nd grade - 14 Children
- Teacher, headteacher, forest educator
- Parents

Case 2 Forest kindergarten

- Focus on 5–6-year-olds
→ 15 children,
- 3 educators,
- Parents



Results 1

How do children interact during outdoor activities?

- Interact in various learning processes
- Develop over time
- Take advantage of the opportunities their environment offers
- Are committed to protecting nature

“At some point during a team meeting, the question came up about whether we should put a trash bag or a trash can up there. And we just realized that it wasn’t necessary, because the kids have a really good sense that if they bring trash into the forest, they’ll take it back home with them. And, well, yes, they point it out to us when there’s trash lying around somewhere—like something a hiker or someone left behind.” (WKE2 transcript, paragraph 55)

- Show a strong connection to nature



Results 2

To what extent do the educational principles and actual educational practices in the institutions studied align with the ESD goals?

- Place great importance on the role of nature in children's development
- Transparency and clear rules are highly valued
- Informal/implicit learning is highly valued – children are actively involved in everyday activities
- Focus on a process-oriented approach; support children in their individual development
- Clear boundaries provide freedom for development
- Encourage individuality and rely on flexibility to address the diverse needs of children
- Place great trust in the children and encourage their independence



Results 3-1

To what extent do children demonstrate competencies that correspond to the ESD goals?
In the context of ESD, how do educators describe the competencies of their children?

Code Category	Codes School	Codes Kindergarten
Self Competence (K2)	<ul style="list-style-type: none">• Being able to occupy oneself• Being able to show fascination/excitement• Being able to articulate oneself• Being creative/using one's imagination• Being able to concentrate, showing perseverance• Being inquisitive, showing interest in (new) things• Being able to relax and be calm• Being able to develop strategies	<ul style="list-style-type: none">• Being able to occupy oneself• Being able to show fascination/excitement• Developing self-confidence/trust in one's own abilities• Being able to articulate oneself• Being creative/using one's imagination• Being able to concentrate, showing perseverance• Being inquisitive, showing interest in (new) things• Being able to relax and be calm• Being able to develop strategies

Table 7.4.: Comparison between the codes from the two cases in the category 'Self Competence'

Results 3-2

To what extent do children demonstrate competencies that correspond to the ESD goals?
In the context of ESD, how do educators describe the competencies of their children?

Code Category	Codes School	Codes Kindergarten
Social Competence (K3)	<ul style="list-style-type: none">• Taking over responsibility/being able to work independently• Being able to change perspective/to show empathy• Being able to get along well with other children• personality development• learning to deal with conflicts• being able to collaborate with others	<ul style="list-style-type: none">• Taking over responsibility• Being able to change perspective/to show empathy• Being able to communicate with each other• Being able to get along well with other children• personality development• learning to deal with conflicts• being able to motivate others

Table 7.5.: Comparison between the codes from the two cases in the category 'Social Competence'

Results 3-3

To what extent do children demonstrate competencies that correspond to the ESD goals?
In the context of ESD, how do educators describe the competencies of their children?

Code Category	Codes School	Codes Kindergarten
Subject Competence (K4)	<ul style="list-style-type: none">• being able to identify connections/interrelationships• knowledge about biology/ecology	<ul style="list-style-type: none">• being able to identify connections/interrelationships• knowledge about biology/ecology

Table 7.6.: Comparison between the codes from the two cases in the category 'Subject Competence'

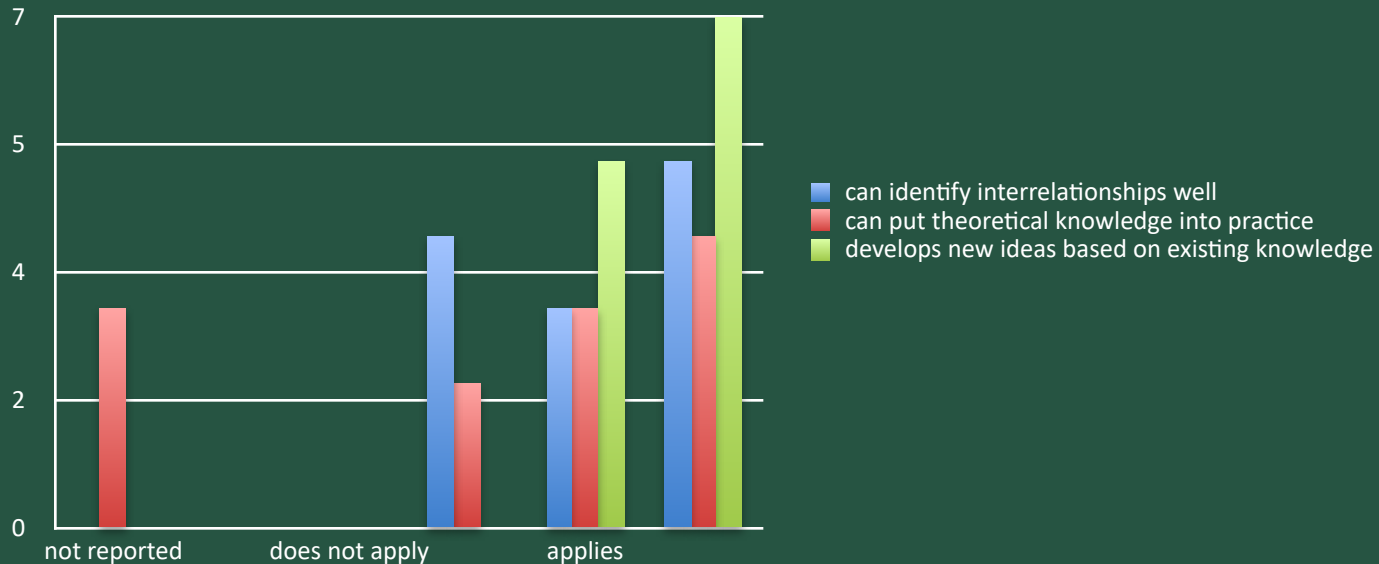
Code Category	Codes School	Codes Kindergarten
Physical Development (K5)	<ul style="list-style-type: none">• Development of motor abilities• Facilitation of sensory perception	<ul style="list-style-type: none">• Development of motor abilities• Facilitation of sensory perception

Table 7.7.: Comparison between the codes from the two cases in the category 'Physical Development'



Results – concrete Examples

Ability to make connections

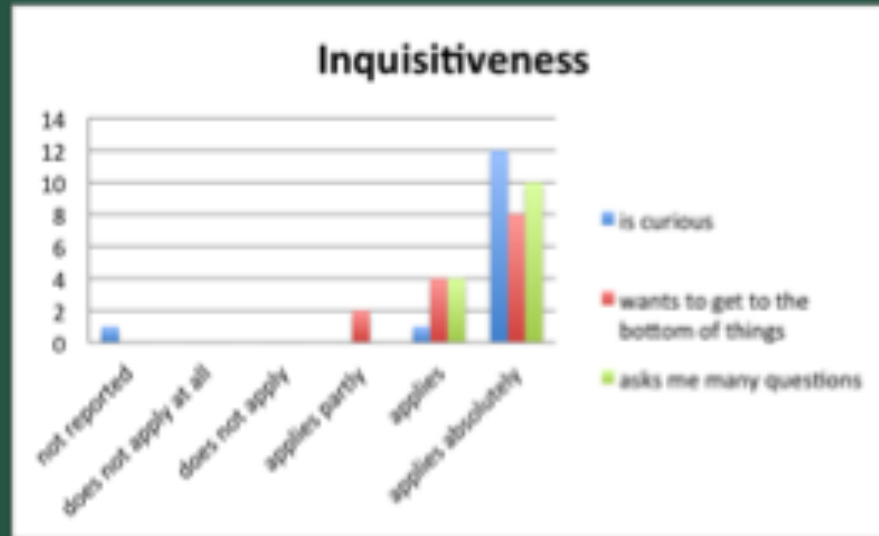


“... it’s just a given for our children that things like this take time. That food isn’t something that’s always just sitting on the store shelf—that it doesn’t just appear there out of nowhere—but that it has a history behind it, and that there’s real work involved.” (WKE1 Transcript, Paragraph 74)

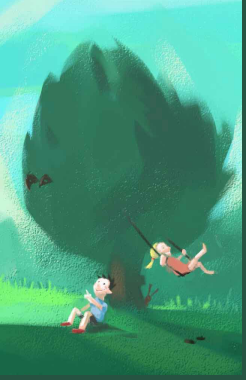




Results – concrete Examples

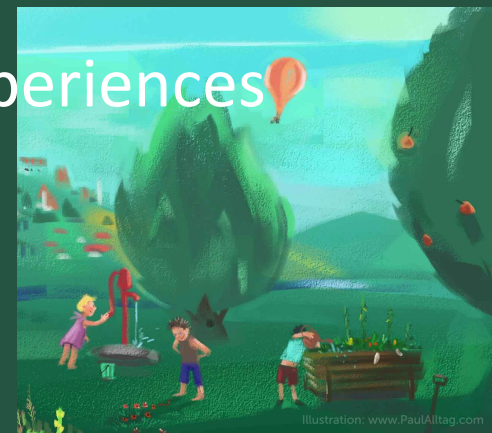


“It seems to me that the younger the children are, the more they discover. With preschoolers—the little ones—you often only need to walk a few meters into the woods, and there you experience and discover so much, marvel at so much, and learn so much yourself, because you learn to see things differently. They have that urge to explore. And that is the deep curiosity that is inherent in children. That’s what children need. That’s how children learn—by discovering the world through their curiosity. It’s profound. That’s what being a child is, really. They are explorers, par excellence. You don’t have to tell them to be explorers; they are explorers. You just have to let them be explorers, give them the opportunity. And out there, the field is wide and the possibilities are vast.” (SHE1 Transcript2, Paragraph 14)



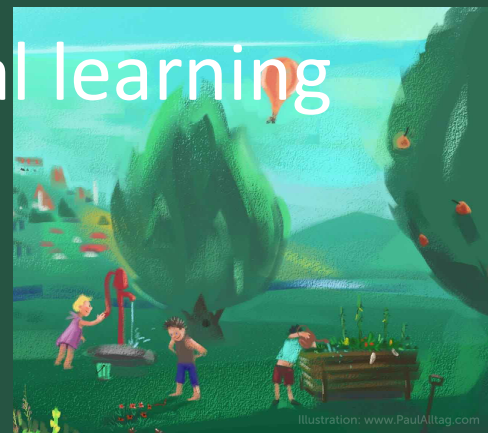
Implications for everyday practice

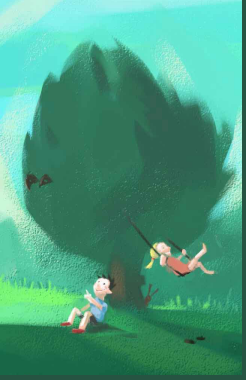
- Support and expansion of forest kindergarten initiatives
- Increased implementation of forest days in kindergartens and elementary schools
- (Re)design of outdoor spaces with greater emphasis on natural elements (shrubs, trees, edible plants, water features, etc.)
- Increased implementation of garden education in elementary and primary schools
- Incorporation of nighttime nature experiences



Recommendations for teacher training

- Greater emphasis on ESD in the training and professional development of early childhood and elementary school teachers
- Strengthening understanding of the connections between ESD and nature experiences
- Greater emphasis on experiential learning





One touch of nature makes the
whole world kin

(William Shakespeare, Troilus And Cressida, Act 3, scene 3)

