tearning based

Co-funded by the **Erasmus+ Programme** of the European Union



values

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Acknowledgements

We would like to thank all teachers, educators, researchers, and all others that have participated in the project and that have, with their ideas, feedback, and encouragement contributed to the development of this document.

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This project has been funded with support from the European Commission, Erasmus+ programme and Germany national agency for Erasmus+. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. Project No: 2020-1-DE03-KA201-077217



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IN LOVING MEMORY OF SVENJA POKORNY

1964-2022

Svenja Pokorny graduated from the University of Bologna (Italy) with a degree in mass communication. She was a much appreciated project designer, co-ordinator, evaluator, and researcher in EU funded projects. Across a variety of roles, the unifying theme of her work was the empowerment of citizens through education and the use of learning technologies in selected sectors and through a common European approach. She was one of the authors of this handbook.



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1. INTRODUCTION

1.1 THE ELVE PROJECT

Everybody should be conscious of the damage we are causing to our planet: what happens in one part of it affects the whole world. We can find the solution for serious problems of the present days starting from EDUCATION. In this frame, the teaching staff is directly responsible. As an oriental proverb says, "If you want prosperity for a year, plant some rice, if you want prosperity for ten years, then plant some trees. But if you really want prosperity for a whole life, give education to the new generations". Aiming at lifelong prosperity, Environmental Education helps children understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, and proposes ways we can take action to keep our environment healthy and sustainable for the future.

Our focus is starting FROM EARLY CHILDHOOD because learning begins long before a child enters the classroom door. Early Childhood Care and Education (ECEC from now on) is the foundation of lifelong learning. ECEC is a right for all young children. And up skilling onto primary education.

Our project addresses ECEC, Primary education teachers and pedagogical coordinators involved in working with preschool and primary school children.

Therefore, our indirect target audiences are:

- 3-6 and 7-11-year-old children.
- Schools and other educational institutions.
- Experts in the field of environmental and values education, organisations, and associations of experts, etc.
- Policy and decision makers like regional/national authorities
- The public.

In this frame, the ELVE project aims to:

- Implement a Transnational Curriculum for ECEC and Primary education teachers in the partner countries, accompanied by a short review of the current provision regarding Environmental Learning based on Values Education for 0-11 teachers.
- Design innovative materials and Open Educational Resources (OER) for 0-11 school education teachers and educators in the field of Environmental Learning based on Values Education, developing and promoting innovative learning approaches.
- Develop a Handbook for teachers clearly explaining the proposed model of Environmental Learning based on Values Education with an aim to enhance the professional development of those working or active in the school education sector by increasing the quality and range of initial and continuous training.
- Create an Innovative Knowledge Hub for informing and downloading OER materials aiming to raise awareness about the importance of environmental sustainability and social values to strengthen its educational structures in a system of values supported by all relevant stakeholders.

• Promote the development of the ELVE network to increase the project outreach and raise the awareness of using environmentally and inclusive approaches in preschools and primary schools supporting the achievement of the Sustainable Development Goals (SDGs from now on) the blueprint to reach a better and more sustainable future for all.

ELVE's consortium is formed by 6 project partners from 5 different EU countries which come from a wide range of backgrounds including the World Association of Early Childhood Education, Universities, Training, Research and Development Centres and Associations, and SMEs.

1.2 ABOUT THIS DOCUMENT

Friedrich Fröbel, the founder of early childhood education, established the first kindergarten (literally "children's garden") in the nineteenth century. These kindergartens had individual gardens for each child, enclosed by a communal garden: children used their gardens as they wished, for playing and experimenting, gaining first-hand experience, and often exploring the surrounding fields and woods. Fröbel believed that children should grow in harmony with nature. Other pioneers of early childhood education shared Fröbel's emphasis on the connection between young children and nature.

This Handbook intends to contain the framework and a set of recommendations for developing and administering high quality environmental education programs in early childhood education connecting to the 17 UNESCO Sustainable Development Goals. Our approach to environmental education for early childhood learners is less about organisation of graduated achievements and more about free discovery on each child's own terms: personal perceptions, attitudes, and connections with nature are key goals at this stage and facilitating positive experiences varies from child to child.

In this Handbook for teachers the reader will find the proposed model of *Environmental Learning based on Values Education* to enhance the professional development of those working or active in Preschool and Primary schools including 31 learning materials divided in 3 pillars: ethical, societal and environmental values.

The main purposes of the Handbook are to:

- Raise awareness about the importance of environmental and values education starting from early childhood as key to build a better world to live in
- Propose an approach that emphasises the development of individual feelings, beliefs, values, and inner unity with nature that are so critical in the early years
- Enhance the professional development of those working or active in Pre-school and Primary schools

ELVE HANDBOOK

The Handbook is divided into 9 main chapters, following this introduction:

- Chapter 1 presents the overall context of this Handbook.
- Chapter 2 highlights the environmental degradation of our planet.
- Chapter 3 defines Environmental Education.
- Chapter 4 explains the importance of Environmental Education from early childhood.
- Chapter 5 presents the results of our ELVE survey and the essential skills and values for Environmental Education.
- Chapter 6 introduces the reader to active learning and play-based, nature-rich pedagogical approaches.
- Chapter 7 presents the role of facilitators of the proposed activities as agents of change.
- Chapter 8 describes the important role of parents and families for Environmental Education in early childhood and primary education.
- Chapter 9 presents the ELVE model and the learning materials to implement in the classroom.

Link to the materials in English:

https://elve.ili.eu/en/learning-materials/

2. CONTEXT: ENVIRONMENTAL DEGRADATION OF OUR PLANET

Remember: Earth is the only planet in our galaxy that can support life. Climate change and environmental degradation undermine the rights of every child.

The top reason that teachers gave in our survey for not covering climate change? "It's not related to the subjects I teach."

What do we mean by environmental degradation?

Environmental degradation is a process through which the natural environment is damaged in some way, reducing biological diversity and the general health of the environment. This process can be entirely natural in origin, but it can be accelerated or triggered by human activities. When one ecosystem is under attack because of natural or man-made disaster, it is extremely difficult to calculate all effects throughout nature. When two or more ecosystems are being degraded the probabilities of synergistic destructiveness multiply. Ecosystems, despite their biological richness and their promise of material benefits are threatened worldwide.

Today, many international organisations recognise environmental degradation **as one of the major threats for the planet**, since humans have only been given one Earth to live on, and if the environment becomes irreparably compromised, it could mean the end of human existence.

Threats & pressures

Human activities are affecting ecosystems functioning across the Earth. The following boxes provide a short overview of the main problems that must be tackled if the world is to remain a supportive habitat for humans and other species.

Climate change

When the sunlight warms the surface of the Earth, a large portion of the reflected thermal radiation is absorbed by the greenhouse gases in the atmosphere. In the early history of our planet this so-called "greenhouse effect" created a protective envelope in which life was able to unfold. The natural greenhouse effect is one of the things that makes Earth a comfortable place to live.

Since the Industrial Revolution (around 1750) human activities have generated excessive greenhouse gas emissions. Thus, human activities have been changing Earth's natural greenhouse effect: excessive amounts of heat have been trapped by the greenhouse effect resulting in the global warming of the Earth's atmosphere beyond safe levels. Warmer air means that there is more energy and moisture in the atmosphere, which is leading to a variety of severe consequences: floods, tornados, droughts, heat waves and wildfires.

Infographics on climate change

The below visualisation is an animated image showing how the ice in the Arctic cap has diminished in the past twenty years due to global warming.



Arctic sea ice minimum extent

Image source: BBC

At the rate global warming is rising now and with no great actions being taken, the global changes will be dramatic for humans and all living creatures. The WWF created the following visual infographic to show the possible consequences. It also shows the enormous difference in impact between a global warming of 1.5°C and 2°C.



Source: WWF.

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Biodiversity

According to the <u>GEMET</u> (General Multilingual Environmental Thesaurus), Biodiversity is an umbrella term that stands for the variety of species of plants and animals that live in one environment. It encompasses three basic levels of organisation in living systems: the genetic, species, and ecosystem levels. Plant and animal species are the most commonly recognized units of biological diversity, thus public concern has been mainly devoted to conserving species diversity. Scientists estimate that Earth is home to about 300,000 plant species and about 10,000,000 animal species.

Biodiversity is essential for human health and well-being, economic prosperity, food safety and security, and other areas critical to all humans and all human societies. Organisms, ecosystems, and ecological processes supply us with oxygen and clean water, they help cycle carbon and fix nutrients, they enable plants to grow, they keep pests and diseases in check, and they help protect against flooding and to regulate the climate. A rich biodiversity will speed the recovery of the environment after a natural disaster. As every organism has a role to play in its ecosystem. For example: the act of deforestation without (at minimum) replanting lost mature trees, can be catastrophic, both locally and globally.

Biodiversity loss

The greatest threat leading to the loss of biodiversity is the human race. As our population grows together with our need for food, water, industry, transportation, and home comforts, it takes over natural ecosystems and replaces them with unnatural ones. Even in these, other organisms can adapt and successfully reproduce, but the levels of biodiversity as compared to the replaced environment are significantly lower.

Our wildlife is declining at an alarming pace. Species are disappearing at more than 100 times the natural rate. Scientists have warned that we are entering the sixth mass extinction, with whatever we do now likely to define the future of humanity. The other five mass extinctions include the asteroid strike that killed off the dinosaurs and many species in the sea. According to leading researchers (Prof. Ceballos, National University of Mexico in Mexico City, Stanford University's Prof. Paul Ehrlich, and Dr Peter Raven of the Missouri Botanical Garden in St Louis, US) whatever we do in the next 10 to 50 years is what will define the future of humanity.

Infographics on Biodiversity loss and restoration



Source: Adapted from Biodiversity loss infographic. Plants and animal destruction., Vector illustration (Alamy purchased for ELVE)

Ways to restore biodiversity

Land	Farming	Cities	Oceans
Protect	Make better	Make space	Protect marine
wild areas	for nature	for nature	habitats
Water Safeguard lakes and rivers for wildlife	Climate Reduce impacts of climate change	Food Plant based diet, reduce waste	One health Manage whole environments to aid health

Source: UN convention on biological diversity

Sitography

<u>The European Environment Agency</u>. In close collaboration with the European Environmental Information and Observation Network (Eionet) and its 32 member countries, the EEA gathers data and produces assessments on a wide range of topics related to the environment.

<u>Eionet - The European Environment Information and Observation Network.</u> EEA and Eionet gather and develop data, knowledge, and advice to policy makers about Europe's environment.

<u>BISE</u> - <u>Biodiversity Information System for Europe</u>. The Biodiversity Information System for Europe (BISE) platform acts as a single-entry point for biodiversity data and information in Europe. It is the result of a partnership between the European Commission and the European Environment Agency, and serves as the Clearing House Mechanism for the EU within the context of the United Nations Convention on Biological Diversity (CBD).

<u>WWF</u> and <u>WWF you tube channel.</u> WWF is the world's largest conservation organization, with over five million supporters worldwide, working in more than 100 countries and supporting around 3,000 conservation and environmental projects.

UNEP <u>UN Environment Program.</u> UNEP sets the environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system.

Glossary

Ecosystem: all the living and nonliving things in an area working together as a system

Biodiversity: Biodiversity is a term which describes every living organism within a single ecosystem or habitat, including numbers and diversity of species and all environmental aspects such as temperature, oxygen and carbon dioxide levels and climate. Biodiversity can be measured globally or in smaller settings, such as ponds.

3. WHAT IS ENVIRONMENTAL EDUCATION

Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Solutions to one problem must be solutions for all

Ban Ki-moon

To understand why children need to be educated in environmental education based on values, it is first important to know what environmental education means and how it is defined. Environmental education is the process by which people become aware of their environment and acquire knowledge, skills, values, experiences, determination. This process helps in the individual and societal implementation of current and future environmental problems. In this learning process, which sharpens the perception of the environment and its challenges, individuals develop necessary skills and expertise to face these challenges and develop attitudes, motivations, and obligations to make knowledge-based decisions and take responsibility. In addition, environmental education promotes critical thinking, problem-solving skills, and the ability to make effective decisions (Environmental Education, *n.d.*).

The historical definition of environmental education has its origins in the 1972 UN Conference in Stockholm, during which the development of a programme was initiated to promote environmental education globally. This led to the preparation of numerous working papers, the creation of the UNESCO International Environmental Education Programme, and at the International Workshop on Environmental Education in Belgrade in 1975, the participants from 60 countries defined the goal of environmental education in the so-called Belgrade Charter, which has been the definition of environmental education ever since: "The goal of environmental education is: to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones." (UNESCO-UNEP, 1976, as cited in Hollweg et al., 2011). The following objectives were added to this definition, which represent the components of environmental education for social groups and individuals:

1. AWARENESS and sensitivity to the environment and its allied problems.

2. Gaining **KNOWLEDGE**, experience and basic understanding of the environment and its associated problems.

3. **ATTITUDES** of concern for the environment, and the motivation for actively participating in environmental improvement and protection.

4. Acquire SKILLS for solving environmental problems.

5. **PARTICIPATION** in activities in working towards a resolution of environmental problems.

This leads to the principles and core themes of environmental education. Environmental education should be part of a person's entire education, since the potential to learn about sustainability can happen both formally and informally. Therefore, interdisciplinary approaches should be adopted in education and taught across subjects. Direct experience with nature should also be an essential part of environmental education and the way of teaching is at least as important as the content. One key to promoting education for sustainability is partnerships between educational institutions and the wider public.

Especially regarding the (global) public, the multicultural perspective needs to be considered, because sustainability is based on an understanding of diverse cultural perspectives and approaches to problem solving. These core themes empower individuals and institutions to contribute to sustainability in a sustainable way (Environmental Education, *n.d.*).

Values play an important role in teaching sustainability to individuals. Values are the way for people to understand the meaning behind a more sustainable way of life, the reason why they need to protect the environment. This means that the earlier an individual develops values, the more likely he or she is to strive for a more sustainable way of life. This means that if we want to protect our planet, we need to teach children about values.

A child is born without a set of values. Children acquire this system through social contacts, through the environment, society, and its structures into which they were born and raised. They develop values through everyday family social interactions in which, for example, parents teach them various aspects of living together, such as not to lie, to be kind or to share with others. This happens through simple everyday encounters, through simply setting good examples, e.g., carrying the shopping home for the elderly neighbour or, in relation to the environment, not carelessly throwing rubbish on the street, but possibly even picking it up. However, values and beliefs are not only transmitted through one's own family, but also through engagement with the world: through friends, relatives, books, television, and the experiences they have in their community, children absorb values and social norms (Davis & Keyser, 1997). Now, for children to develop an awareness of our environment and how to protect it, we need to teach them how to save our planet in our daily interactions.

For this reason, the consortium of the ELVE project has developed learning materials that teach children in a playful way to take better care of our environment. In this child-friendly way, they build up knowledge about our environment and the associated challenges, which they can reflect on and pass on to be able to set a good example afterwards. In addition, it is not only children who learn about environmental challenges and the importance of environmental education, but also adults, professionals who teach our children every day in kindergarten and school or parents. Moreover, professionals need to have a wider range of courses available on how to teach sustainability, which is the reason the ELVE curriculum that combines both values and environmental education was developed.

4. WHY WE NEED ENVIRONMENTAL EDUCATION FROM EARLY CHILDHOOD

Environment is no one's property to destroy; it's everyone's responsibility to protect Mohith Agadi



Science is clear. From the time a child is born, he or she is learning every waking moment. In fact, babies and toddlers are either learning or sleeping. And between birth to age 5, a child learns at a speed unmatched the rest of his or her life! It is during these years – when more than 85 percent of a child's brain is formed – that crucial brain connections are created. These connections help develop indispensable academic, social, and cognitive skills, which are the basis for learning.

Considering the previous, article number 21 from the Convention about Children's Rights, approved by the UN in November 1989, says:

"The members of this organisation affirm that children's education has to be set out to develop children's personality, abilities and mental capacities <u>up to the maximum</u>".

Although it is not a strict definition this article defines perfectly what we currently must understand as education. Nowadays, we could define education as something that is offered to every child in order that they can acquire conscience of their creative and sensory motor capacities, of their expression and communication capacities and finally, of their intellectual and emotional abilities, all through pedagogic and recreational experiences.

According to Jacques Delors' (1996) essay for the UNESCO, the 21st century education should be based on the following propositions:

- To learn how to KNOW.
- To learn how to DO.
- To learn how to LIVE.
- To learn how to BE.

In this frame, it is proposed that education has two missions: to teach children about the diversity of the human species and to contribute to make children aware of the similarities and dependence amongst all human beings (Delors, 1996). In this way, schools must take advantage of as many opportunities as possible to carry out these two types of education, from early childhood.

It is evident that we must help children through education. We will help them to become free people; to be free, they must learn how to be critical and how to offer the best from themselves to the society. They will also be helped to form their personality and to learn how to live; in this way, children will have internalised different moral and social values.

Education promotes the possibilities that Nature, the heritage, or the environment offer the children. It never tries to change children according to a static model; on the contrary, education tries to stimulate the best things each child owns.

Thanks to education we can form new generations; these generations will know and understand the world and compromise themselves to improve that world little by little. Education must be adapted to the new



challenges and opportunities of modern society, in which many changes take place. Scientific, humanistic, and artistic knowledge, as well as the ones about the different cultures, will help us to adapt education to all these new necessities.

Without any doubt, education is more than the mere acquisition of knowledge; in this way it would never have to be confused with instruction. Thus, education considers not only the things that can be learnt in the schools, but also the ones that are learnt from the family, some friends, the environments, the mass-media, etc.

Environmental education as a need for development

A way to prevent the further deterioration of the world is to ensure that every person receives appropriate environmental education and acts according to its guidelines. This then becomes a developmental need and an essential educational task.

Environmental education encompasses three fundamental aspects:

- Scientific knowledge of the surroundings. It is impossible to act over something when it is unknown to us. So, the first step of environmental education is to study the world around us from its very base, our surroundings. We need to know the laws, conditioning factors, principles, rational and scientific explanations of the facts and phenomenon of the material, animated and inanimate world. Without this knowledge it is impossible to adequately act over our setting and direct our actions.
- Knowledge of the means and actions handed to preserve our environment. Once we know the facts and phenomena of the natural world, we need to know how to act and in which ways we can preserve, enrich, and maintain the world. In this way, the actions to be carried out can be done in a more effective manner and with less effort and resources than when we are unaware of the peculiarities of the phenomenon to be solved.
- Values, principles, and rules formation when it comes to the preservation and caring of the Natural World. It is not useful at all to know the world around us and how to preserve it if we are unaware about why we have to do it. Perhaps, this is the most important point of environmental education.

The early education program has environmental education as one of the main aims, because these pieces of knowledge are very important for the development and even for the survival of human beings.

We must teach this environmental knowledge through a lot of different contents, so we have tried to include most of them in our program. Through them children will learn appropriate pieces of knowledge about the environment, ways of action to preserve the natural world and rules and values about its preservation.

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Likewise, children will learn about facts of animate and inanimate Nature; the functions of our organism; the relationship between the environment and the health and nutrition; the continuous circle of life, etc.



Thus, for example, when a child learns how a plant grows from a seed and he/she observes it in practice, as well as the light, heat and humidity conditions that act on it, then that child is also acquiring conscience about the natural world rules. Or, when this same child discovers how a piece of ice melts into water without trace, he/she is learning about how a life source can be contaminated and discovers then the world physics laws. And if we make him/her aware of the relationship between the form

and structure of an animal according to the place in which this animal lives (*e.g.*, polar bear) the child will be learning some principles about the animal world. What is important and fundamental is that the explanations about facts and phenomena have to be given over a truthful scientific base, without providing any "magic" or "mystic" answer, or any answer that only has an empirical foundation.

But if we teach a child that if we feed an animal, it becomes bigger and healthier; if we teach him/her that watering a plant it becomes more and more beautiful.... and if he/she learns about the relationship between the things he/she knows and the actions he/she is carrying out, then that child will be consolidating the apprenticeship about the environment and the actions to preserve it. So, it is not enough to teach only the pieces of knowledge, but also how we must act.

Probably the most important thing of this programme is that emotions and love feelings towards plants, animals, Nature, and the world in general, must be consolidated in children. Each child must learn that the environment is a gift he/she has received and therefore he/she must love and preserve it. Only by learning these things is how we can guarantee an appropriate environmental education.

This education has to begin when the child is very young; first of all it will consist only on things like "please, don't step on that leaves" or "don't hurt the picture of that animal", but later he/she will be taught more specific pieces of knowledge and ways of acting in the daily life to preserve the environment: The caring of the orchard, the cleaning of the school... Through all the pedagogic and methodological possible ways.

This is what makes environmental education a transverse and general program that is developed through all the activities of the school, because those activities are related, in one way or another, to the environmental education knowledge, rules, actions and values.

We can only understand environmental education if we treat it simultaneously with what we traditionally know as value education. Children won't take care of the environment if they don't usually respect either themselves or other people. So, we must educate children to share, respect, love, believe, etc.

5. ESSENTIAL SKILLS AND VALUES FOR ENVIRONMENTAL EDUCATION

The only way forward, if we are going to improve the quality of the environment, is to get everybody involved Richard Rogers

The ELVE partnership has implemented an intensive desk and field research involving 152 teachers and educators and 17 experts from the participating countries (Germany, Spain, Italy, Cyprus, and Croatia) and has identified the following proposal of learning units for environmental education in preschool education:

- 1. Introduction I: Why environmental education
- 2. Introduction II: Why values in environmental education
- 3. "Oneself" ethics and environmental education
- 4. "Oneself and the others" regarding environmental education
- 5. Environmental values, as we live in the planet Earth

After the analysis, particularly of the field research, an initial draft of values and objectives that could be covered under each unit are:

UNIT 1: INTRODUCTION I: WHY ENVIRONMENTAL EDUCATION			
VALUE	OBJECTIVE		
Responsibility	 Stimulate awareness of the value of natural resources for the Earth and for mankind Develop an awareness of importance of a responsible attitude towards oneself, others, and nature Empower the children with knowledge, skills, and confidence to be able to react and actively act in your community. 		
Early years, Early "green" experiences	 Stimulate awareness about the importance of diversity of colours in nature Encourage children to think what green colour means to them Associate green with values. 		
Curiosity	 Observe their environment and daily life Associate importance of natural elements in everyday life Recognize behaviour that harms the natural environment Develop and nurture curiosity towards nature and its natural process. 		
Respect	 Develop in children, through playful, sensorial, and cognitive experiences, correct habits of respect and protection of the natural resources Encourage a respectful attitude towards others. 		
Dialogue	 Encourage speaking and listening skills Enable children to overcome possible prejudices, biases, preconceptions, discrimination and understand the relationships between mankind and the environment. 		

UNIT 1: INTRODUCTION I: WHY ENVIRONMENTAL EDUCATION (Cont.)				
VALUE	OBJECTIVE			
The SDGs: 17 Goals to Transform Our World	 Get familiar with the 17 Goals to Transform Our World Associate the 17 goals with sustainable development and environmental protection Think how to implement the 17 goals in everyday life Raise awareness about the importance of cooperation for achieving the 17 goals. 			
UNIT 2: INTRODUCTION II: WHY VALUES IN ENVIRONMENTAL EDUCATION				
VALUE	OBJECTIVE			
Creativity	 Encourage active learning through different activities that focus teaching on the student Improve experiential learning through concrete experience, reflective observation, abstract conceptualization, and active experimentation Develop creative thinking to find innovative solutions for nature conservation. 			
Flexibility	 Observe the ability of nature to change and adapt encouraging willingness to change Emphasise that man is a part of nature and changes along with it Provide examples of how people have adapted throughout history to different situations and environments. 			
Sensibility	 Connect the senses with the observation of environment and develop the sense perception as the means through which knowledge is gathered Find the connection between senses and sensibility recognizing physical and emotional sensitivity Raise awareness about the importance of sensibility for the environment. 			
Exploring	 Acquire the ability to observe the surrounding world Understand how a polluted environment affects personal and the general well-being Recognize how the principles of ecosystems based on connectivity and balance can be applied to the functioning of our society and civilization. 			
Love	 Associate love with positive and mental state Identify different kinds of love Distinguish the love for oneself and for others Show kindness, compassion, and affection for living beings. 			

UNIT 3: "ONESELF" ETHICS AND ENVIRONMENTAL EDUCATION.				
VALUE	OBJECTIVE			
Self-esteem	Stimulate moral reflection, autonomy, responsibility, care, and empathy in children Promote a positive formation of character and building capacities for reflective and informed moral judgment. Establish a positive emotional relationship with environment Help children situate themselves as members of local and global communities Develop understanding that personal actions effect the environment, and that individual can make a difference in preserving ecology.			
Patience	 Recognize where impatience comes from in everyday situations and associate it with emotions Give examples of patience in nature Reflect patience in nature with everyday life Connect patience with decision making and problem solving. 			
Resilience	 Get familiar with nature's strategies to survive Stimulate relationships, wellness, healthy thinking, and meaning to increase resilience Develop an ability to physically, mentally, and emotionally cope with a difficult situation. 			
Honesty	 Develop honesty to take responsibility for individual actions towards nature Honestly consider the influence of man on nature Develop skills for self-reflection to recognize oneself mistakes as well as good actions. 			
Self-care	 Raise awareness about the importance of self - care Establish the connection between health environment and self - care Encourage the environment to achieve well-being on a personal level as well as achieve well-being at the community and society level. 			
Accountability	 Understand how personal actions affect other people and the environment Promote willingness to accept responsibility towards nature and animals Be accountable for pets we have. 			

UNIT 4: "ONESELF AND THE OTHERS" REGARDING ENVIRONMENTAL EDUCATION				
VALUE	OBJECTIVE			
Empathy	 Recognize and understand the feelings of others Imagine the feelings of others in different situations Associate humans and animal emotions Experience the unselfish behaviour towards other people and animals. 			
Friendship	 Stimulate positive relationships based on mutual sympathy and trust Debate what does it mean to bee friend with nature Raise awareness about long-term positive relationship with nature for sustainable future. 			
Generosity	 Encourage willingness to give help or support without expecting anything in return Connect generosity with sense of happiness and satisfaction Give examples how our generosity can help improve the environment in which we live Motivate others to cherish and protect the nature. 			
Solidarity	 Recognize the situations in which environment needs our help Express the attitudes towards environmental problems based on facts and critical thinking Encourage active participation in environmental protection. 			
Diversity (respect)	 Express the feelings, opinions, and attitudes without fear of rejection or criticism Understand how diversity has positive effects on the personal development, community, and environment Recognize the importance of diversity in nature (biodiversity) for the mankind Associate diversity with sustainable development and growth. 			
Cooperation and mutual Aid	 Recognize that each person is part of a group/community Raise awareness that each person with their knowledge and skills is an important link in the group/community Develop a sense of belonging Emphasise the importance of group/community in achieving sustainable development To necessity and cooperation with service animals. 			
Tolerance	 Emphasise the importance and value of diversity Develop fair and objective attitude toward opinions, beliefs, and practices that differ from one's own Acceptance of the differences between others and ourselves Raise awareness about the importance of coexistence with nature in urban areas Speciesism (Peter Singer) to understand how we separate and value one specie over the other Understand that animals have their instincts which are hard for them to control. 			

UNIT 5: ENVIRONMENTAL VALUES, AS WE LIVE IN THE PLANET EARTH			
VALUE	OBJECTIVE		
Conflict Resolution	 Encourage children to think critically about conflict Learn boundaries in conflict situations and understanding there are different possible ways for solving conflicts Express own attitudes in a creative and non-violent ways Practice to tolerate the provocation without responding in angry or disrespectful way. 		
Health	 Define and understand the concept of healthy living Build awareness of connectivity as the foundation of understanding the importance of global ecosystems and natural resources for achieving the best in human resources and for ensuring a good quality of life. 		
Fairness	 Define fairness as based moral and ethical values Understand how injustice affects the person, community, and environment Encourage behaviour that contributes to equality and well-being for the community and the environment. 		
Recycling	 Identify types of recyclable materials Develop skills and knowledge on how to reuse different materials in everyday life Connect the importance of recycling with environmental and health benefits Raise awareness of the active involvement of the community in waste separation and recycling. 		
Freedom (animals in captivity)	 Define freedom for humans and animals Identify the difference between animal in captivity and in natural habitat Define animal rights to raise awareness of human responsibility towards animals. 		
Environment Protection	 Recognize the importance of a healthy environment Stimulate the use of responsible and sustainable lifestyles with respect to nature and to natural resources Direct the child's behaviour towards models consistent with ecological, social, and cultural sustainability Develop in children the habits of active participation in the actions of nature protection. 		
Science and Environment	 Understand and associate how everyday activities affect the local and global level Define and analyse environmental problem Define the means on how to solve the problem Develop practical skills for achieving quality change and solving the problems our world is facing. 		

Using the ELVE environmental learning proposal, educators intentionally foster growth and development across social-emotional, cognitive, physical, and language domains of preschool children. This learning will lead, as the child matures into adulthood, to environmental literacy.

6. ACTIVE LEARNING AND PLAY-BASED, NATURE-RICH PEDAGOGICAL APPROACHES

We must teach our children to smell the earth, to taste the rain, to touch the wind, to see things grow, to hear the sun rise and night fall –to care. John Cleal

5.1. What is Active Learning?

Active learning engages students as active participants in the learning process. It is a student-centred approach to teaching and learning, beginning with students and involving them in meaningful activities that support their learning. This contrasts with a traditional teacher-led approach which places the teacher as the "expert" who disseminates knowledge, sets tasks, and decides the entire learning process, without meaningful/significant input from students.

Active learning:

- Is "anything that involves students in doing things and thinking about the things they are doing" (Bonwell & Eison, 1991)
- Is "all kinds of learning beyond the mere one-way transmission of knowledge in lecture-style classes (passive learning)" (Mizokami, 2014)
- Is "student-centred, collaborative, participative, and self-reflective" (Waniek & Nae, 2017)
- Involves "student activity and engagement in the learning process" (Price, 2004).

Characteristics of active learning:

- Students are involved in more than just passive listening
- Students are engaged in activities (*e.g.*, reading, discussing, writing)
- There is less emphasis placed on information transmission and greater emphasis placed on developing student skills
- There is greater emphasis placed on the exploration of attitudes and values
- Student motivation is increased (especially for adult learners)
- Students can receive immediate feedback from their facilitator
- Students are involved in higher order thinking: analysis, synthesis, evaluation (Bonwell, *n.d.*)

5.2. Why play-based learning?

Play is the most natural thing in a child's life. The advantage of play is its ability to completely occupy the child's attention and concentration, awaken the imagination and creativity and create a feeling of unencumbered work. Now of playfulness, the child acquires certain knowledge that until recently represented a great psychological effort. Through play, the child learns, gets used to the rules of social behaviour and develops his motor and intellectual abilities (Ćurko & Kragić, 2009).

Play-based learning can be defined as the ways in which early childhood professionals make provisions for play and playful approaches to learning and teaching, how they design play/ learning environments, and all the pedagogical decisions, techniques, and strategies they use to support or enhance learning and teaching through play (Wood, 2009). It is through play that children also learn who they are as individuals and how they should interact with others in different contexts. Children learn cultural tools (*e.g.*, activities, interactions and understandings that are appropriate and acceptable in everyday settings) in their families and communities (Jordan, 2010: 98). From this perspective, play and capacity to play can be considered significant for children in learning new things and forming relationships with nature and other human beings (King *et al.*, 2020; Wood, 2010.).

5.3. What is nature-based learning?

Nature-based learning or learning through exposure to nature and nature-based activities can occur in natural settings or built environments (e.g., classrooms) if elements of nature, such as plants, animals, and water, have been brought in. It encompasses the acquisition of knowledge, skills, values, attitudes, and behaviours in a variety of fields including academic achievement, personal development, and environmental stewardship. It includes learning about the natural world and can be applied in any subject, skill, or interest while in natural surroundings. Nature-based learning can occur with varying degrees of guidance or structure, across the age span, alone or with others, and in urban, suburban, rural, or wilderness settings.

Nature-based learning can occur as:

- Formal learning - children have contact with nature during structured activities in schools and preschools or during outdoor field trips.

- Non-formal learning - children have contact with nature during out-of-school programs, camps or family visits to parks or nature centres.

- Informal learning - children have contact with nature during free play in natural area (Jordan & Chawla, 2019).

5.4. What are the benefits of active, play and nature-based learning?

According to the Natural Learning Initiative the benefits of connecting to nature have been well documented in numerous scientific research studies and publications. Collective research shows that children's social, psychological, academic, and physical health is positively impacted when they have daily contact with nature.

Some of positive impacts include the following:

- Supports multiple development: intellectual, emotional, social, spiritual, and physical
- Supports creativity and problem solving
- Enhances cognitive abilities
- Improves academic performance
- Increases physical activity
- Improves social relations
- Improves self-discipline
- Reduces stress

7. THE ROLE OF FACILITATORS

"Children grow up hearing how broken the environment is, how broken beyond repair. Plant strawberries together, make wild medicines, paint the sunrise. Show them proof that for every act of destruction, they can sow a seed, however small, of beauty." ~ Nicolette Sowder

The broad definition of a facilitator's role in a learning environment can be summarised as the role of a person responsible for giving instructions, motivating, and guiding the learners when they face a challenge. In the context of Early Childhood Education, the facilitator's responsibilities extend to adopting specific strategies and methods to support young children at their learning journey. Been (2012: 21-22) explains that the role of the Early Childhood professional is usually misinterpreted for the role of a person who takes care or plays with the children, whereas the facilitator is an educated professional who supports the children's learning.

Montessori (1936: 132) and Breen (1996: 8) introduce the idea that the adult is part of a child's environment and plays a significant factor in the child's development. Breen (*ibid.*) prefers the

terms "architect" and "facilitator" for the early childhood professionals. In the same study, she describes facilitators as professionals who try to balance between their curriculum objectives and "management strategies dictated by the here and now" (*ibid.*, 9).

Taïridou (2018: 13) focuses on the social aspect of the facilitator's role and explains that they have to be a classmate, a friend, a parent and an educator at the same time. From a young child's perspective, the



facilitator is the person who can solve all their problems (Dafermou *et al.*, 2006: 32). She underlines the necessity of solid communication skills as the facilitator's relationships with the children have not only a pedagogical, but also an emotional level and are based in mutual acceptance. For Taïridou, the facilitator must be flexible, keen to provide children with personalised teaching tailored to each child's particular profile and eager to adapt their strategies and assessment accordingly.

According to Dafermou *et al.* (2006: 32-33), the facilitator's role can be summarised in the following points:

- shapes a verbal and non-verbal communication safe setting
- encourages a mutual appreciation, tolerance, and respect environment between the children
- creates conditions where the children's creativity and imagination can be developed
- sets goals according to each child's general cognitive level
- focuses not only on what they learn, but also on how they learn
- is a constant observer and listener
- can define what triggers the children's interest and curiosity

- can plan and implement open activities during which children can take part and decisions
- can evaluate these activities
- can offer children the necessary resources and support to successfully solve problems and boost their self-confidence
- encourages critical thinking
- promotes both team and individual work
- maintains continuous communication with parents and engages them in the learning process.



Dafermou *et al.* (*ibid.*, 34) indicate that the facilitators' main goal is to meet the children's needs and that they constantly try to adapt their methods to achieve better results. For this reason, the facilitator also plays the "ambassador" role as they need quality and strong relationships with the parents to be able to support them and ensure parent-teacher cooperation (*ibid.*, 35). Likewise, Fein (1993: 13) notes that environmental education is part of a child-centred

approach to education, as it "give[s] students self-confidence and esteem, and a sense of oneness with nature".

Thomas (2005: 110) defines facilitation as a set of methods, strategies, and techniques and an understanding of the way and the reason why they work. For Thomas, the facilitator needs to have the necessary skills and knowledge as environmental education may address controversial matters.

Kaur (2013: 10) considers the facilitators' role very valuable for environmental education as they can raise awareness on the environmental issues and help tackle them. Kaur (*ibid.*) sees environmental education as an interdisciplinary subject and believes in its implementation as soon as the children start having awareness of the environment. For Kaur (*ibid.*, 12), the facilitators can be identified as "important agents of change in society". Due to their training and expertise, the facilitators should be involved in environmental education as they can influence and encourage the children in various ways and create "environmental literate citizens" (*ibid.*, 15).

A very important aspect of the early childhood facilitators' role is their relationship and cooperation with the parents. The facilitators need to build a trusting relationship with the parents and maintain regular communication with them to ensure the best interests of the children. Particularly for environmental education, cooperation with the parents and adoption of a more sustainable lifestyle at home can sensitise young children towards building and maintaining sustainable habits even more.

8. THE ROLE OF PARENTS AND FAMILIES

"We do not inherit the Earth from our ancestors, we borrow it from our children" Maasai proverb



We have all heard the refrain that our obligation as a society is to leave behind a better world for our children. In a world that will be inherited by our children, the best way to ensure a better, healthier planet is to equip today's youth with the knowledge and leadership skills to meet tomorrow's environmental challenges. This requires parents taking an active role in educating the next generation.

Fathers and mothers, the family as an integral unit, make up the most influential educational agent on the development of the child during the first years of life. The family is the most important primary human group in man's life, the most stable institution in the history of mankind.

The family has been pointed out as the developer of several functions, such as the economic, that historically has characterized it as a cell of the society; biosocial, that includes procreating and raising children, as well as the sexual and affective relations of the couple and the spiritual and cultural that assumes, among other things, the satisfaction of the cultural needs of its members, their cultural improvement and leisure, as well as the education of the children.

Some authors differentiate, in addition, the educational function that in many ways permeates all the others; because all of them satisfy the needs of its members but at the same time, educate the younger members and thus, ensure aspects of social reproduction that are characterized for its continuity and duration. The family is the first school of man, and the parents are the first educators of their children.

The ultimate goal of environmental education is environmentally responsible behaviour, a causal pathway that is complex, especially when considering environmental education for children that is intended to also influence parental behaviour.

Children learn what is happening in their surroundings primarily through communication with their parents. For this reason, home education sets out the seeds of children's behaviour and moral shaping in the future (Haktanır, 2007).

When it comes to environmental education there is many parents can do to promote responsible environmental citizenry. Parents are the single-most influential influence in a child's life; the role of parents as educators, role models, and mentors is of paramount importance. As society becomes more aware of the self-inflicted dangers that it has imposed upon the planet, the need for parents to teach children about environmental stewardship grows ever more important. These teaching opportunities can also encourage parents to reflect upon the way they are positively or negatively contributing to their family's view of environmental protection and conservancy.

Children learn more by what we do than what we say. It is important that parent's model environmental stewardship in day-to-day activities. It is one thing to discuss the importance of compostable goods and recycling with children; it is quite another when children observe these products and actions in their own homes. Again, the focus is on experiencing rather than teaching.

Parents can help children understand what environmental citizenship really means. Young children may have difficulty comprehending global environmental concerns, but they can think and act on a local level. Parents can facilitate this by providing opportunities that teach children to be responsible and engaged environmental citizens.

Environmental education should not be limited only to giving information and bringing responsibility but should also make changes in the behaviour. Great duties fall to families in protecting the natural and manmade environment, attracting interest and attention to environmental problems, bringing knowledge and teaching behaviours for the solution of problems, teaching the preservation of history and cultural heritage, and adopting love and respect for nature.

Finally, since the knowledge and skills, environmental awareness, and values necessary for a better life represent the future of people, they should be transferred especially to children and mothers in the family. Compared to fathers, mothers spend more time together with children and are more intimately connected with them. Therefore, their education has an important place in raising the environmental consciousness of children.

Tips for parents and families

Many adults were true naturalists in their childhood, but they have left the world of Nature behind as the adult world has engulfed them in the whirlwind of responsibilities and obligations. There are many activities that you can do with your child to foster a love of nature, being able to enjoy again the natural talents that they left aside at the end of their childhood.

- They can raise the awareness of children to environmental issues regarding the pollution of their immediate surroundings: noises, fumes, smells, dirt from the streets and water, etc. They can also provide experiences through which you understand the transformation of nature by the influence of changes in climate and natural phenomena such as rain, snow, or drought. The motivation to actively participate in the care, improvement and protection of the environment will help you acquire skills and resources to intervene in the resolution of some environmental problems.
- Familiarise the child with the natural things in their environment: plants, birds, insects, trees, flowers, etc.
- Make sure the child becomes aware of the park as a pleasant place to enjoy and where plants, animals, trees, etc. coexist. Let them value the professions of the people who take care of the city: garbagemen, street sweepers, gardeners, etc., and reflect on what would happen if those professions did not exist.
- Help them to know the plants: their external parts, the care they need, what they provide us, the classes, and names, etc. Let them discover how they are born and grow, that they need to breathe and feed to grow like us, etc. Plant seeds and take care of the growth of the plant by checking the need for sunlight and water for it to grow.
- Know the flowers and their classes as part of the plants, appreciating their beauty, aroma, and colour.
- Provide opportunities for the child to get closer to the animal world (birds, dogs, cats, ants, snails, etc.), to know and understand their way of life and their needs, learning to take care of them, love them, and respect them.
- Visit natural science museums with your child. When you get home, discuss what you have seen, have the child share their impressions and draw pictures of what has impressed them the most.
- Review television programming and watch together programs that are related to Nature and natural phenomena (animals, plants, volcanoes, hurricanes, etc.).
- Whenever you have the opportunity, go on excursions to the mountains, the beach, the forest. Enjoy the elements of nature together and teach children to take care of them.
- Encourage their affection for plants and animals, but alert him to the precautions he should take to avoid wasp, spider, or other animal stings. Also show them the fruits of some plants that they should not put in their mouth or eyes. Do not promote fear, it is about knowing and loving Nature without taking risks.

9. THE ELVE MODEL AND THE PROPOSED MATERIALS TO IMPLEMENT IN THE CLASSROOM

Don't wait until children understand how important green time is for their growing minds. Today, leave the homework untouched, in favour of outdoor play and real-world learning Penny Whitehouse



ETHICAL VALUES - Personal values - oneself

DEMOCRATIC AND SOCIETAL VALUES – as we live in society - Oneself and the others **ENVIRONMENTAL VALUES** - as we live in the planet Earth

In our ELVE model, we used appropriate methodology that places children in the centre of a learning process. We developed 31 learning materials that are children/student oriented, and in these materials, participation becomes the most important condition for active learning. To put it in simpler terms: "I hear thus I forget, I see thus I remember, I do thus I learn".

The 31 learning materials are divided into the 3 mentioned pillars, sorted by topics and age groups. However, all the materials can be adapted according to the age, vocabulary, and ability of the group.

	ETHICAL VALUES	DEMOCRATIC AND SOCIETAL VALUES	ENVIRONMENTAL VALUES
Age group	TOPIC	TOPIC	ΤΟΡΙϹ
	Self-esteem	Empathy	Conflict Resolution
26	Patience	Friendship	Health
3-0	Creativity	Cooperation and mutual Aid	Love of nature
			Early years, Early "green" experiences
	Resilience	Solidarity	Fairness
6-9	Honesty	Diversity (respect)	Recycling
	Curiosity	Generosity	Freedom (animals in captivity)
		Sensibility	
	Accountability	Tolerance	Science and Environment (the value of knowledge)
9-11	Self-care	Dialogue	Environment Protection
	Flexibility	Respect	Exploring
3-11			The SDGs: 17 Goals to Transform Our World
6-11			Responsibility

The recommended materials are those directly related to everyday life problems and situations, everyday objects, ethical dilemmas, and ethical values.

Depending on the methodology you will be using, materials could be hands-on: stories, photographs, comic books, art crafts, as well as audio-visual files, PowerPoint presentations, online videos.

The methodology that is used in ELVE's learning materials is explained in the step-by-step implementation guidelines that will guide the facilitator to easily reach each set of learning goals.

We have included here a detailed explanation of the template used for learning materials' elaboration.

The individual specifications are:

- AGE (Children's age groups): 3-6; 6-9; 9-11; 3-11; 6-11
- VALUES (Values' type): Ethical; Democratic and Societal; Environmental
- LOCATION (Location of the activities): Indoors; Outdoors; Online; School; At Home
- RECOMMENDED GROUP SIZE: The 3-11 age range has very different cognitive, motor, and moral development stages in children. That is why some activities for the youngest should be performed in smaller groups or even, if and when possible, individually (if the parent is implementing the activity with the child or if there are more than one facilitators, which is often the case in kindergartens). Depending on the learning material, keep in mind the ideal approximate size of the group.
- RECOMMENDED TIME: Predicted time for activity implementation (this doesn't include preparation time, but just the duration of the actual activity with children).



AGE	VALUE	LOCATION	RECOMMENDED GROUP SIZE	RECOMMENDED TIME / MINUTES
3-11	Democratic	Indoor	20+	60-90
TOPIC	Name of the topic from table above			
OVERVIEW	WERVIEW Short overview of the topic before the lesson/activity reader will teach the children in, a facts and hints where they can find more information if needed (web links). Web links should be in English and if possible, adopted to national languages.			
LEARNING OBJECTIVES	Learning objectives that should be achieved in field of ELVE. For example, in a topic of: Responsibility - Recognize what our responsibilities towards ourselves and our community are Or conflict resolution - Identify the difference between a conflict and argument For the youngest age group, the goals could be also connected to developing fine motoric skills as they are connected to cognitive development. Also, experiencing the emotions or sensations through holistic approach.			
SKILLS DEVELOPED	Overall skill that are developing through specific learning material. For example: If topic is conflict resolution and goal is Identification of differences between a conflict and argument, to achieve the goal, the developing skills would be: - perspective taking - self-reflection - critical thinking			
METHOD	The method that will be used in the implementation of activity e .g. critical and creative thinking			
MATERIALS	List of required materials for the implementation of activity e.g. computer, paper, plastic bottles			
GUIDELINES	Concrete detailed and clear steps on how to implement learning material in their learning surroundings. Keep in mind that in step-by-step guidance each activity or set/examples of questions should supplement the previous one, as an experience that is slowly being graded by building on previous one.			
TIPS ADDITIONAL MATERIALS HOW TO APPLY IT ONLINE? WHAT TO DO AT HOME?	This section is optional, and it depends on type of learning material developed.			
AUTHOR	Name(s) of person(s) who developed learning material			

Link to the materials in English https://elve.ili.eu/en/learning-materials/

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