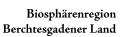# ELENA Project

Competency Framework

The Core Competency Frame were developed by the partners of **ELENA (Experiential Learning and Education for Nature Awareness)** project that has been funded with support from the European Commission's Lifelong Learning Programme, in the framework of its Comenius sub-programme.

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.

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Introduction and Aims

Based on the Lisbon Strategy all Member States in the European Union undertake substantial efforts to launch inter alia educational processes underlying the development of new skills for 2020. At the same time biodiversity is one of the biggest treasures for humans, as it provides basics for and quality of life. There is a need for social awareness about how individual and collective behaviour, our economic activity are directly influencing diversity and the state of ecosystems. This urges us to focus our efforts besides the basics of environmental education on entrepreneurship education as well.

ELENA (Experiential Learning and Education for Nature Awareness) is a trans-European cooperative project of partners from Georgia, Germany, Hungary and Romania with the aim to promote awareness of nature and responsibility for nature among schoolchildren in elementary and secondary education. The aim of the ELENA project is to involve emotions in the learning process through the help of animals. The project builds upon the experiences of the successful initiative "Tiere Live" [1] developed and elaborated by the Bavarian Academy for Nature Conservation and Landscape Management in the recent years. The major aim of "Tiere Live" is to promote the respect and emotional understanding of children and youth for nature and environment. They can experience the fascination of nature by touching living animals and being inspired by them, thus getting to know and appreciate these creatures. Building an emotional bridge between the natural world and the children is very important for attitude shaping. This way the kids learn love and responsibility, as well as several practical skills. They will not be able to stay neutral if they touch the natural world, and if it touches them.

A similarly important message of the live animal activities is that problems may occur at school, and children have to learn to cope with it. It is their task to find ways to overcome or solve these issues, while they also learn that they are able to manage problems thus gaining more self-confidence about their own abilities. As a result, it will not only provide them hands-on experience with animals, but this will also have a positive impact on their own personality and their future performance. Learning conflict management is a crucial asset nowadays, when we are experiencing incredibly turbulent times in the EU and in the world as well.

Based on these findings the ELENA project develops and brings forward the activities, which are generating positive emotions through meeting and working with living animals. These positive emotions motivate the children to achieve a better understanding of nature and a sustainable use of natural resources, which results in consciousness, awareness, problem-solving abilities and environmental responsibility.

Pursuing this goal, the partners work out modules, teaching materials, "learning by doing" methodology and systems thinking games. In course of the module-based pilot teaching and learning process based on modules the pupils, students will develop the skills necessary to

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[1] http://www.anl.bayern.de/english/cooperation/tierelive_e.htm

acquire environmentally responsible attitudes in their future personal and business life. So pupils have the chance to develop their entrepreneurial skills through biology and environmental science. Experiential learning is also the cornerstone of entrepreneurship education, where learners need authentic, practical experiences and realistic learning environments as essential parts of active learning. This is in line with one of the priorities of the Lifelong Learning (LLL) project: to contribute to the development of the European Union as an advanced knowledge-based society with sustainable economic development.

To reach the above mentioned pedagogical goals the ELENA project also aims at finding the common platform to define the required competences, that connects the so far separated business entrepreneurship and environmental education. The goal of the partners was to identify and select some life-skills needed for school leavers to be able to find and implement close-to-nature based solutions in their working and business life. Therefore, participating partners have elaborated a competency framework on knowledge, skills, attitudes, values of the selected competencies, that serves as a basic target of the activities and modules, and they will also be used in the development of assessment instruments for the project.

The Competencies

In a multi-sectoral workshop of experts from all partners the project participants, based on their experiences, selected the following 6 core competency elements to be targeted by project activities:

> *curiosity, knowledgeability, responsibility organisation self-reflection, open-mindedness.*

Although the mentioned 6 competency elements are given a prominent place in the project, numerous other life skills are developed throughout the activities, all of which contribute to the children's personality shaping.

With this in mind, "competences are the positive combination of knowledge, ability and willingness in the availability of the individual to cope successfully and responsibly with changing situation"[2]. In other words, competences represent an ensemble of skills, knowledge, qualities and attitudes that include ability to learn[3]. We based our concept on the *European Commission's Key competencies for lifelong learning – European reference framework*[4], where each competency is described from the point of view of knowledge, skills and attitude, while focusing on sustainable entrepreneurship.

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[2] Weinert, F.: *Concept of competence: a conceptual clarification,* in Rychen, D. and Salganik, L. (.eds): Defining and Selecting Key Competencies, Seattle, 2001
[3] http://www.ofi.hu/tudastar/nemzetkozi-kitekintes/egesz-eleten-at-tarto#11
[4] http://bookshop.europa.eu/en/key-competences-for-lifelong-learning-pbNC7807312/

CURIOSITY
Definition
Curiosity is a strong desire to know or learn something,[5] or a strong feeling of wanting to find out something.[6]
Knowledge and Understanding
Curiosity is based on the desire to acquire in-depth knowledge and develop understanding; to explore concepts, ideas and issues that have local and global significance; to discover missing ingredients and to know how and where to find those missing bits and pieces. To gather knowledge in a spirit of openness towards the living world, to look for new perspectives and to deal with incomplete and overly complex information, thus to update and upgrade knowledge.
Skills
Skills of curiosity demand to acquire knowledge by exploring the surrounding world and wondering about it, asking questions, seeking information, evidences, listening to experienced and knowledgeable professionals also by interactive use of media and technology. The ability to communicate in verbal, written forms is an essential skill for acquiring new knowledge. Building on these skills one will be able to search for additional knowledge, thus to gain, process new information and skills.
Attitude
Attitudes for curiosity include attributes to enjoy active learning, to discover new ideas and to be ready for new knowledge.
Contribution to Sustainability and Entrepreneurship
It is highly important to foster the pupils' innate curiosity, to connect them with nature aiming to build communities interested in processes, changes in natural and human systems, to ask questions, to identify causes and search for near-natural solutions. Curiosity is the never-ending thirst of individuals looking always behind the phenomena, searching for answers, igniting innovation, which are necessary for sustainability as well.

KNOWLEDGEABILITY
Definition
Knowledgeability means having updated knowledge and understanding in many different disciplines.
Knowledge and Understanding
In order to be knowledgeable it is important to know where and how to collect the information, how to draw conclusions from observations, how to validate data and sources and how to observe systems. In the ELENA project the following capacities are especially important: knowing how to observe living animals, understanding the meaning and importance of biodiversity in general, and of the animal world in particular, understanding the complexity and cycles of ecosystems in relation to human life as well. Proving to have the appropriate knowledge regarding *ex situ* and *in situ* conservation of species. Developing scientific representations regarding animal life – in situ and ex situ.
Skills
Ability to carry out scientific observation, to analyse and describe the findings and to complement the available knowledge with it. Identifying animal species and their groups. Describing the animal body anatomy and the function of the described components in relation to the life of the animal. Associating animal species with their natural habitat. Scientific interpretation of the animal's behaviour against natural factors. Applying economical knowledge to describe nature.

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[5] http://www.oxforddictionaries.com/definition/english/curiosity
[6] http://www.macmillandictionary.com/dictionary/british/curiosity

Attitude
Enjoy gaining new knowledge and searching for evidences, interrelations. Pleasure to explore anything, especially the natural, animal world. Interest in understanding the animals' behaviour and their relation to the environment. Tolerance and sensitivity towards animals and the habitat they live in.
Contribution to Sustainability and Entrepreneurship
Students should learn that the knowledge they acquire through these activities can be related to their own present and future lives. The message is that they can have a positive impact, even if starting only on a very small scale.

RESPONSIBILITY
Definition
Responsibility is willingness and feeling related to our acts, undertaking the consequences of our decisions and choosing the ones that we can live together with in the fullest possible harmony with our environment.
Knowledge and Understanding
The learner is able to understand and analyse systems and to find and identify his/her influence on and role within them. He/she becomes conscious about the significance of animal species, creatures living on Earth, as well as their role in the ecosystem. The pupil has the appropriate knowledge for being aware of the significance of scientific, moral and aesthetic values of nature and he/she is able to use this knowledge in other areas of the world, including economy. He/she understands the interconnection between his/her present and future activities and the "healthy" nature.
Skills
Ability to identify the systems' processes that can be influenced on personal or community level; to identify and test proactive models regarding the eco-civic behaviour. The pupil is able to avoid and solve human-nature (animal) conflict situations for the benefit of biodiversity conservation.
Attitude
The pupil feels respect for nature and is willing to take responsibility for her/his own actions. The learner is actively looking for solutions on how to share resources and habitats with other living species on Earth in a fair and sustainable way. He/she develops a creative and tolerant attitude in order to solve human-animal-living species conflict situations. The learner considers why the animals met during the classes are important in the ecosystem.
Contribution to Sustainability and Entrepreneurship
Responsibility also means that the pupil tends to run his/her future business or activities in a way that enhances its positive contribution to society, whilst minimising negative impacts on the people and the environment. The key is to start acting in a responsible way toward nature, our surroundings and the species we share our resources with.

ORGANISATION
Definition
Organisation can be defined as establishing a systemic course of action for oneself or others to ensure the accomplishment of a specific objective. Setting priorities, goals, and timetables to achieve maximum productivity. Transforming desire into action.
Knowledge and Understanding
The core of this attribute is the awareness that we have to take into account the rapid changeability and temporary nature of knowledge relevant to planning. This means that the learners have to know how to cope with permanently, rapidly and dynamically changeable conditions and structures instead of the much more static natural and social environment faced

by former generations. It is key to know how to set priorities with a proper meaning by starting with the most important things and keeping in mind a realistic timeframe while planning, as well as tracking the already completed and upcoming activities to accomplish the previously stated objectives. Understanding and appreciating that "nature is well-organised" leads to recognising the role and responsibility of humans within.

Skills
Developing clear goals that are consistent with agreed strategies. Identifying priority activities and assignments, adjusting priorities as required. Allocating appropriate amount of time and resources for completing the work. Foreseeing risks and allowing for contingencies when planning. Monitoring and adjusting plans and actions as necessary. Using time efficiently.

Attitude
The pupil develops or uses systems to organize and keep track of information (e.g. "to-do" lists, appointment calendars, follow-up file systems). Keeps clear, detailed records of every activity that is related to achieving the stated objectives. He/she knows the status of one's own work at all times even when working with living animals or collecting, recording experiences. The permanent readiness to learn, to prove, to correct and to adjust one's individual decisions, actions and behaviour is required.

Contribution to Sustainability and Entrepreneurship
Individuals need to be aware of opportunities, resources and to be capable to arrange them into a functioning organisation that is also sustainable on long term, instead of just temporarily fulfilling his/her needs.

SELF-REFLECTION
Definition
Human self-reflection is the capacity of humans to exercise introspection and the willingness to learn more about their fundamental nature, purpose and essence.
Knowledge and Understanding
Self-reflection requires thinking and analysing one's own behaviour to find out what has worked and what has not worked. The number one requirement is to be honest to ourselves. The pupil values the learning process, becomes more and more aware of her/his weak-strong points and lifestyle. Changes his/her behaviour or actions by applying what he/she has learnt in new situations. The learner develops a number of ways of assessing his/her own learning.
Skills
Skills of self-reflection require understanding ourselves better by asking tough questions. In this process we seek information of any source and reflect about it. We are ready to discuss our actions with others, to listen to them and value their feedback.
Attitude
Attitudes of self-reflection include openness to new experiences, enjoying the process of getting closer to our real self. It needs giving up a defensive attitude in order to develop self-awareness and open consciousness.
Contribution to Sustainability and Entrepreneurship
The pupil has to acquire some kind of a critical reflection that involves the ability to learn from one's own mistakes. To educate individuals who are compassionate about current and future sustainability and environmental conservation issues it is necessary to teach students to be self-reflective so that they feel connected to the world around them (in this case with the help of animals), and they are aware of their own acts and behaviour.

OPEN-MINDEDNESS
Definition
Open-mindedness means willing to listen to, to think about or accept different ideas[7] and willing to consider new ideas without prejudice as well.[8]
Knowledge and Understanding
Open-mindedness helps schoolchildren to get to know and understand nature and its driving mechanisms. Changing perspectives helps letting even "do-not-like" animals come close.
Skills
Open-mindedness requires the skill to judge something only after having taken other views, information and ideas into consideration. It also requires attentive listening, accepting help and giving somebody a hand, accepting and willingness of seeking advice. Flexibility is also a necessary skill, as open-mindedness may lead to a change of orientation.
Attitude
Important attitudes are tolerance and acceptance of other views, curiosity to get to know and experience new ideas and enjoying to learn more. Open-mindedness is the drive of being happy to try out new things. Consequently one needs to be willing to improve, to change approaches and to accept other solutions especially when conventional measures don't work.
Contribution to Sustainability and Entrepreneurship
In a constantly changing society, with a progressing state of the art in biology and technology, open-mindedness is of essential importance, because it provides the willingness to take new perspectives and points of view into consideration when working on various problems and new as well as old, already known topics. It encourages the usage of diverse measures in dealing with questions, and broadens our knowledge as a result. With open-mindedness we are constantly expanding our horizon and remain successful lifelong learners.

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- Weinert, F., Concept of competence: a conceptual clarification, in Rychen, D. and Salganik, L. (eds): Defining and Selecting Key Competencies, Seattle, 2001

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[7] http://www.oxfordlearnersdictionaries.com/definition/english/open-minded
[8] http://www.oxforddictionaries.com/definition/english/open-minded?q=open-minded