1) Directions used in environmental education

Global education is based on the problems of today's world. Educational goals are not only in terms of knowledge, but also in terms of attitudes and actions. Global education favours active work by pupils over traditional frontal teaching and uses activating methods followed by joint analysis (final discussion, reflection, debriefing, targeted feedback). The teacher is more of a facilitator of discussion than an expert authority.

Earth education focuses on understanding how ecosystems work, what are the basic ecological concepts such as energy flow, material transformation, cycling and interdependence. It emphasizes contact with nature and focuses on deepening environmental sensitivity. Based on the knowledge and experiences gained, children should reduce their negative impact on the Earth by at least one way of conserving energy and one way of conserving materials.

Deep ecology education. It is a pedagogical grasp of deep ecology - a philosophical stream of environmental thinking that demands radical solutions to the causes of environmental crisis and an emotional understanding of the needs of other living creatures. Deep ecological education emphasizes emotions, uses means associated with the practices of natural cultures, and employs rituals, meditation, and imaginative journeys. Typical forms are residential workshops, aimed at identifying participants with other forms of life. The philosophy of deep ecology originated in the 1970s.

Education for sustainable development (ESD) means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development. ESD promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.
ESD is UNESCO's education sector response to the urgent and dramatic challenges the planet faces.

(*Processed by: Činčera, J. Environmental education. But what kind? Pedagogical Orientation 2005, No. 3, pp. 17-24.)*

2) Methodological approaches used in environmental education

Community-based learning is used in place-based learning, particularly to develop people's attachment to place, which increases civic responsibility and accountable stewardship and care. Community-based learning is an educational strategy that focuses on learning in the context of one's own village (community), which includes hands-on learning, experiential learning, work experience, lifelong learning and other methods.

Creative education teaches through art and artistic thinking. It is an interdisciplinary approach that creates the conditions for engaging the individual cognitively, emotionally, socially, ethically and physically. It develops creativity and creative thinking and promotes originality and authenticity. It emphasizes participatory involvement of students in decision-making, critical reflection and collaboration.

Experiential learning emphasizes the activity of the pupils and builds primarily on their own experience and its subsequent use for personal growth. The main principle of experiential pedagogy

is to use the experience of play to achieve predetermined pedagogical goals. The combination of the two aspects of play and education is the essence of the experiential pedagogy method.

One of the sources of experiential pedagogy, focused on observation and enjoyment of nature, is **Joseph Cornell's methodology of flow learning**. The methodology works with four stages of experience - from the initial arousal of enthusiasm to the final sharing of stories.

Inquiry-based learning is aimed at the development of the pupil's knowledge, skills and attitudes on the basis of active and relatively independent knowledge of the reality which he/she is learning to discover and discover on his/her own. Students learn to ask research questions, formulate hypotheses, propose ways to test hypotheses, conduct experiments, and present research results.

Interpreting local heritage is an educational activity that can greatly enhance a relationship with a place. It avoids simply conveying factual information, but uses original objects and personal experiences to reveal meanings and relationships. It influences the behavior of the visitors/program participants, arouses their interest in the place, and promotes a relationship with the place.

Outdoor learning is active learning in the outdoors. "Outdoor learning takes advantage of the natural environment to make learning more visual and more varied in its forms and methods. Thus, we do not consider outdoor learning in nature to be, for example, teaching in an outdoor classroom if it is done only as frontal teaching according to a textbook and the natural environment is ignored." (Daniš, 2018)

Participatory environmental education (participation in environmental education) emphasizes the purpose of environmental education to raise a generation that feels part of change for a sustainable future, Terms that are associated with participatory environmental education are empowerment of the youth and active environmental citizens. This approach is very close to education for environmental citizenship.

Peer education can be described as learning from one's peers. It is the process of sharing information among members of a specific community or group of young people.

Place-based education is an educational approach that uses all aspects of the local environment as a unifying context for learning; it emphasizes civic engagement in projects that have practical relevance to the community, serving the community; it builds social capital, fosters the development of local partnerships.

Problem-based learning is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem. This problem is what drives the motivation and the learning.

Project-based learning emphasizes learning from real-life problems. It connects knowledge from different subjects, helps to see things in context, emphasizes that students solve the chosen problem independently, the teacher is in the role of a guide. It develops the pupil's work and study habits, ability to plan, communicate, look at things from different angles. It enables pupils to work in teams and groups.

Service learning is the most advanced stage of place-based learning where students help solve a problem or meet a need in the community as part of their learning. It involves interdisciplinary collaboration. Pupils not only acquire new knowledge and skills, but also make a practical contribution to the quality of life in the community.

Value-based learning aims at training the student to face the outer world with the right attitude and values. It is a process of overall personality development of a student. It includes character development, personality development, citizenship development, and spiritual development.

Other methodological approaches used or inspired by EE :
Real world learning (RWL)
Wild pedagogy (Wild pedagogy)
(Environmental) Citizenship Education
BIOmimicry – BioLearn Inspired by Nature
Forest Pedagogy
Garden Pedagogy
ZOO Education
Consumer Education
Action-based Learning
Climate (Change) Education

3) Methods used in environmental education

Critical Thinking is a method of thinking that develops the ability to receive, examine, understand information, sort it, process it, compare it with other information, with existing knowledge and opposing views, and see facts in context. The main goal is for students to become independent thinkers and readers who can look at things from different perspectives, can look for correlations between phenomena, and can sort out arguments for and against.

Demonstration is an instructional strategy that involves a live demonstration of a particular concept, process, or skill by the instructor. A demonstration (e.g., an experiment) is typically conducted in front of a large number of learners, with learners not having the opportunity to actively input into the process.

Discussion in education is a form that teaches learners to find and use arguments to persuade their opponents, while at the same time leading to tolerance of the views of others. Debate needs to be moderated appropriately and impartially and should have clear, pre-defined rules.

Ecology and environmental (science) apps for smartphones, usually freely available, can have different focuses. Apps for observing nature and its components are often also linked to scientific projects (citizen science), and these apps help their users to collect data (e.g. Globe Observer, BirdNet). Applications like TrashOut help to detect environmental stresses. Apps like BlaBlaCar contribute to a greener planet.

Environmental sensitivity activities - support participants' sensitivity to nature by using as many senses as possible (touch, hearing, taste, smell and sight).

Field research represents the collection of data and/or information. It can be organized as a one-time collection or as a long-term observation of nature, natural phenomena etc. In environmental education, field research is often associated with citizen science, biomonitoring, and the development of research skills.

Fieldtrip is an effective form of learning, classified as experiential. It is usually an excursion of a group of learners to a place remote from their normal environment. In the context of environmental education and training, field trips are most often organized to places of conservation value. Equally

important, however, are excursions to environmental burdens or to polluting establishments or to facilities such as sewage treatment plants, municipal waste dumps, etc.

Groupwork is an organizational form used in teaching. Groups of 3 or more learners work independently to solve a clearly defined problem. In the phase of independent group work, the teacher acts as a consultant, guides the learners, monitors the progress of the work in each group. At the end of the group work, the individual groups usually present the results of their work in front of everyone.

Hands-on activities is learning through manual (handicraft) activity. During the practical activity, participants are directly involved in learning. Participants gain direct practical experience as they apply their knowledge and learn from their failures.

Philosophy for Children. The basis of the didactic method is the gradual creation of a philosophizing community - a safe space where the teacher sends the children stimuli that motivate them to think and discuss. Children learn to ask open, philosophical questions and to seek answers. They then explore these together through dialogue, during which more questions emerge to help explore the topic more deeply.

Questing is a typical example of a form of place-based learning, based on the concept of structured treasure hunt games. As a rule, questing guides learners along individual stops along a route, where players search for clues and solve a mystery that will lead them to their destination, or even to a "treasure".

Role-play is teaching method in which several participants take on fictional roles (patterns of thinking and behavior) according to a more or less structured scenario - sometimes with the task of merely imitating common life or work situations, sometimes with the task of arriving at some commonly accepted solution to a problem or dispute. The aim is to put oneself in the roles of other people, professions, or people/institutions that have executive, decision-making, advisory, etc.

Simulation games are educational games that simulate a real-world environment with a task for learners to solve. Compared to simpler role-playing games, simulation games work with a more elaborate scenario, clearly stated rules of the game, often with a game plan and other aids.

Other methods

4) Glossary of terms used in education or environmental education

Citizen science is the practice of public participation and collaboration in scientific research to increase scientific knowledge. Through citizen science, people share and contribute to data monitoring and collection programs (e. g. also using mobile apps). Citizen science is a tool to increase public science literacy, too.

Critical thinking is the fundamental life skill of independent thinking, seeking and objectively evaluating information, using healthy skepticism, doubt, and the search for alternatives - in order to form the most objective and truthful picture of the matter under investigation.

Eco-friendly lifestyle is a lifestyle that seeks to limit the use of natural and personal resources at the individual, family, community, and societal level. It involves making conscious choices that minimize our impact on the environment, reduce waste and pollution, and conserve natural resources. The

practice and overall philosophy of an eco-friendly living is consistent with the principles of sustainable development.

Evaluation in education is the process of systematically examining the quality of an educational program or its individual parts in order to assess the fulfilment of educational and learning objectives, the effectiveness of the examined program, with the ambition to use the result of the evaluation to improve or increase the effectiveness of the program. Evaluation can also concern the whole institution, educational establishment - in the sense of the educational setting of the whole institution, including the fulfilment of the ambition of "the environment educates/educates".

Formal education is a process in educational institutions where the objectives, content, and means are set. It is precisely defined and determined by legislation. Formal education takes place at set times, in set forms, in different groups and types of schools and includes the whole population.

Inclusive pedagogy refers to practices that create a fair and socially equitable learning environment and ensure that all pupils have an equal opportunity to demonstrate that they have achieved the learning outcomes. Inclusive (shared) education aims to maximize the development of each pupil, taking into account his/her individual needs and background.

Informal education or non-institutional (or unorganized, unsystematic) education is essentially a lifelong process of acquiring knowledge, skills and attitudes - in everyday life, without organizational interventions. It is shaped by family, peers, but also by watching the media, reading...

Non-formal education is education organized outside formal education - i. e. education provided by different institutions (civic organizations, cultural institutions, businesses, adult education institutions...) to a specific group of learners in different forms, types and content. Non-formal education is not usually completed by the issue of official documents.

Sustainable development is a comprehensive set of strategies that make it possible to meet the widest range of human needs - material, cultural and spiritual - using economic means and modern technologies, while fully respecting environmental limits.

Tutoring is an individualized learning support, delivered by a professional to improve student's skill and knowledge. Tutoring can be formal or informal. It can be in the form of one-on-one help, small group sessions, or even help in a subject area through videos or online tutorials.