

OUTDOOR EDUCATION

An inspirational book about children's approach
with maths, languages, science and creativity in
The preschool's outdoor environment



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ABOUT ORE

- **A two years project within Erasmus+ small-scale partnerships in school education**
- **September 2022-September 2024**
- Applicant: Halleberg preschool in Vänersborg, Sweden. Other partners: "Il Trenino blu" preschool, ASP CAV. MARCO ROSSI SIDOLI, Italy; "Pegaso" preschool in Carpi, Unione Terre d'Argine, Italy; "Daugavpils pilsetas 27" preschool, in Latvia.
- **Objectives:**
 - To develop teachers' knowledge of outdoor activities and contribute, in a small scale, to the achievement of the global goals (4. Good education, 3. Good health and Well-being, 12. Sustainable consumption and production)
 - To improve teachers' skills in designing and organising safe outdoor environments in preschools by exchanging good practices

ABOUT ORE

Results:

- Increased skills of pedagogical coordinators, teachers and educators on how to design a safe outdoor environment in preschools;
- Created outdoor environments where children can explore senses;
- Created outdoor environment able to give children the necessary knowledge required to live both healthy and sustainable;
- Good practices exchanged on how to teach children about the care of the environment;
- Good practices exchanged on how to raise awareness and curiosity in children about the surrounding environment.

IDENTIFIED ZONES AND TOPICS

During the project's life, partners visited each other's preschool (training activities) with the aim to:

- have a mutual exchange of practices and to share guidelines on the outdoor education;
- To focus on educational strategies about the importance to take care of the environment.
- To consider outdoor activities as a tool for inclusion of children coming from different cultural backgrounds.

In this book, we collected best practices that each project partner selected and tested.

Each best practice consists of one identified "Zone" and some specific topics.

Preschool yards should offer different kinds of areas/environments (zones) considering different needs. Through the zones, we want teachers being more active and engaged in play, experiences and learning process together with children.

Zones:

ITALY, "Il trenino blu" preschool : "GARDEN OF ALL SENCES"

ITALY, "Pegaso" preschool: "SENSORY PATHS"

SWEDEN, Halleberg preschool: "WILD AREA"

LATVIA, Daugavpils pilsetas 27 : "DIGGING AREA"

Topics

CREATIVITY (Il trenino blu; Pegaso; Daugavpils pilsetas 27)

MATHS (Halleberg; Pegaso)

LANGUAGE (Halleberg; Pegaso)

SCIENCE (Daugavpils pilsetas 27; Il trenino blu)

BEST PRACTICE, SWEDEN HALLEBERGS PRESCHOOL



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IDENTIFIED ZONES

❖ *Forestzone/ Wildzone*

The Forestzone is a garden with a forest-like character where the children can develop a relationship with nature and the plants, animals and insects that live there. With the educators, the children can use the zone in their play and teaching where the children can develop their creativity, their language and use natural materials to e.g. classify, sort, work with concepts, build letters, etc.

We chose this zone because our children at the preschool enjoy being in the woods, climbing, exploring and experiencing with all their senses. To have our own forest environment at the preschool where we can take material from our forest excursions and continue with our teaching at home as well as offer more physical activities such as climbing, building, obstacle course, etc.



IDENTIFIED TOPICS

❖ *Language and Maths*

We will work with language and mathematics. To experience language and mathematics with all the senses and the whole body in outdoor education to consolidate the knowledge.

In language we will train the children's ability to name concepts in our forest environment. Practice the letter sounds linked to the different objects in our forest.

We have chosen to work with letter sounds that are part of the future language and writing development when the children learn to speak and write. The children will have the opportunity to investigate in the forest-like environment and name different objects with concepts, they then train their abilities around the speech sounds in the objects.

In mathematics we will have the purpose to investigate/explore number sense with the help of the forest. We have chosen to work with number sense and number order, this is a step in gaining an understanding of how numbers and numerals are connected in a concrete way.



FOREST ZONE FROM THE BEGINING

Our idea is to bring the forest into our preschool yard. Make the children aware of both the small and large things in the forest and the animals we can discover. Get them to experience with their senses, use their bodies to learn, build, balance, etc. The fact that the children get to develop their knowledge of mathematics and language in nature and the local environment is a fantastic experience that combines learning and exploration. It also provides an opportunity to learn about and create a relationship with our environment and nature.

Nature invites you to conversations that stimulate language and imagination. Nature is full of shapes and formulas that make it easy to think about mathematics when you are outdoors.



The preschool forest
"Now we have our own forest in our yard"

MATHS

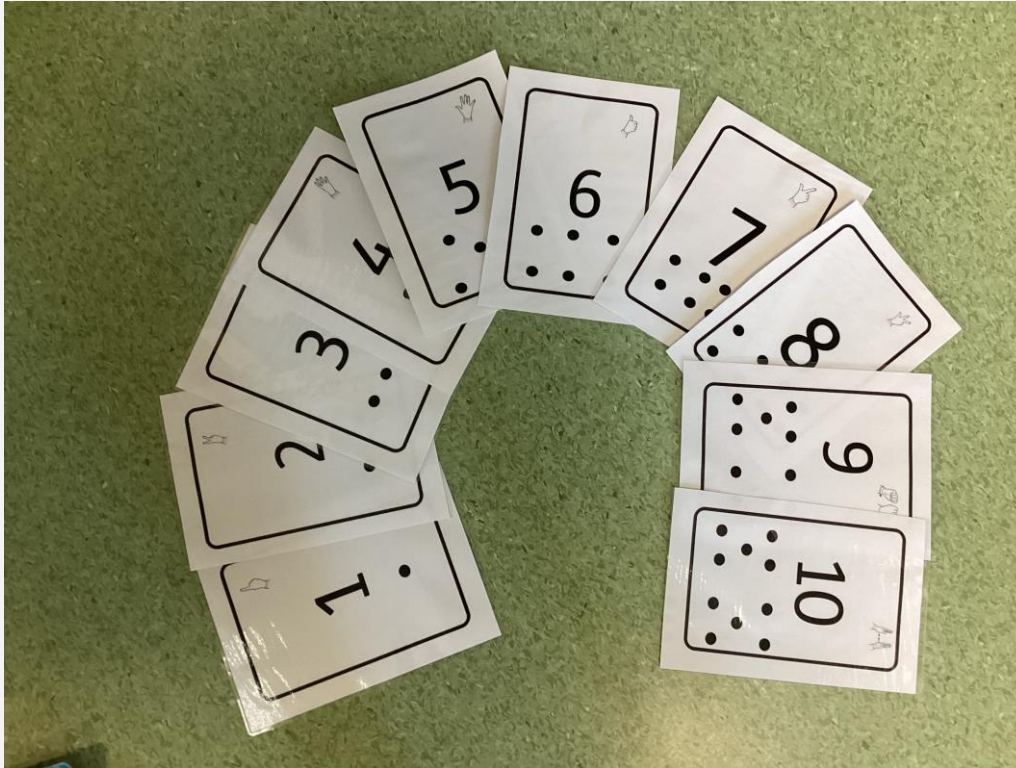


Look and talk about the number 1 and the dot together.

Walk around in the forest together and find one thing of the different objects in the pictures.



Here, the children look at the number 1, the dot and the picture and try to find as many objects as there are on the number.



Assignment:

Numbers 1-10

Watch and talk about the number line 1-10.

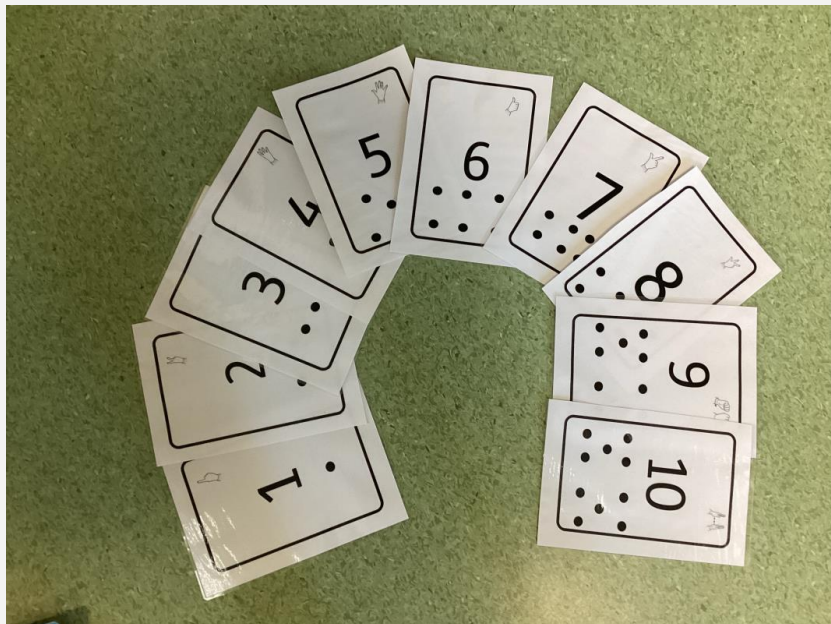
Hide the numbers in the woods.

Let the children look for the numbers

Add the numbers together in the correct number line.



The children reason together where the numbers should be in the number line.



Assignment:

Numbers 1-10

Place the numbers together in the right numerical order.

The children are given the task of picking up the number of objects as the number in the picture.



The children have sorted the number order and picked up natural objects for each speech. Children's comments:

"This was easy for me. We helped each other. That was fun, can I get another number?"

LANGUAGES



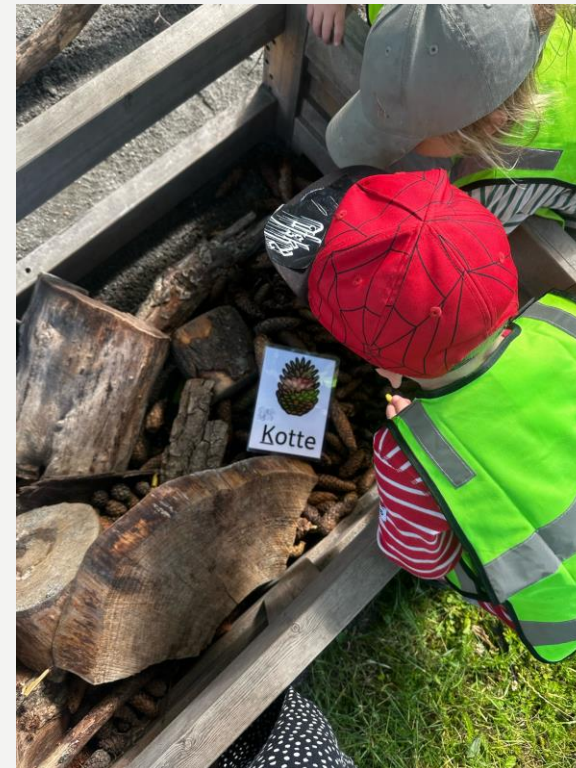
Look and name the objects in the pictures and find them in the forest.



Here, the child has found the same object in the picture as in the forest.



Look at the pictures, find the objects in the forest and talk about the objects.



Here the children will find the various objects.



View one image at a time,
locate the object in the image.
Connect the first letter of the
object on the letter mat.



Here, the children connect the
first letter on the letter mat
with the pictures of the various
objects they have found in the
area.

RESULT

The children who have been involved throughout the process of building the forest environment show greater awareness, knowledge about taking care of our new environment, and see the process of change in the environment unlike the children who have not been involved during the entire process. We also saw a clear difference among the educators depending on whether they have spent time in the forest environment, participated with interest and been active in the project or if the educator did not participate during construction. We see differences in how educators approach and use the forest environment in their teaching.

The outdoor environment provides a linguistic basis for the development of concepts; the children have learned many new forest words. The children's mathematical understanding has increased through, among other things, the use of concrete objects from nature together with pictures.

The children get an increased language foundation in their conceptual development as we have chosen to include a forest environment that has not previously existed at the preschool and have conscious teaching opportunities in the forest environment/zone around what exists.

All the children helped and supported each other during the activity to solve the tasks they had been given. The teaching groups have been small and everyone has felt safe with each other. These aspects, as well as the children's curiosity, the environment and the assignments provided have been contributing factors to participation, helpfulness and cooperation.

The teaching material were unambiguous and easy to understand, which allowed the children to develop an understanding of how the task should be solved.

The results of the activities are in accordance with the content of the objectives - speech sounds, letter sounds, speech order, and mathematical skills have been trained.

REFLECTIONS

We saw that the environment supports teaching, that there is a good interaction between adults and children, the children interact with each other and can help each other to their proximal development.

The Forest zone was the right size to teach in, and at the same time, easy to supervise the children in while they explored on their own.

When we had a clear start and end to the activity, for example, the alphabet song for language and some arithmetic or rhyme for mathematics, we were able to arouse curiosity and allow for the children to develop a direct interest in what language and mathematics are about.

The environment favors teaching, it was easy to follow the children in their exploration.

The appropriate number of children in the teaching groups is an important factor to be considered. There should be fewer children if they are younger or if they have difficulty focusing, etc. There should not be too much difference in the children's level of development.

It's a good idea to spend a few minutes reading up and preparing for the activity you're going to do. The children were curious and expectant.

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Lectures and och Workshops:

Lecture "Space for outdoor education" Maria Hammarsten

-Workshop "Outdoor Education in Practice"

Lecture and discussions "Lekotoper" Fredrika Mårtensson

Visited the Landscape Laboratory with Fredrika Mårtensson and Björn Wiström. this ties in with the lecture about Lekotoper .

**BEST PRACTICE,
LATVIA
DAUGAVPILS
PILSETAS27
PRESCHOOL**



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IDENTIFIED ZONES

❖ *Digging area*

In the Digging area the children get the opportunity to use their creativity, develop their language and think mathematically. By using their body, the children get to explore and use different techniques when digging and shoveling. The digging zone is a place where the children can naturally cooperate and which promotes social interaction.

We chose this zone after observing the children's interest in digging and playing in the sand. Therefore, with the help of preschool workers and parents, we decided to expand and organize the area allocated for the digging activities.

IDENTIFIED TOPICS

❖ *Creativity and Science*

The activities combine science and creativity in an engaging, educational way, and provide children with practical experience in paleontology. They stimulate curiosity about dinosaurs and prehistoric life, promote patience, attention to detail, and fine motor skills.

The children performed digging activities in the excavation area, digging various materials out of the ground in the field with the help of shovels and rakes. When digging them up, the children cleaned every pebble and snail with a brush. The children turned the collected natural materials into interesting works.

Working with natural materials brings children closer to nature, and also creates more interest in collecting and using them. Painting stones with their unusual transformation is an interesting activity, because the result is fast, bright and surprising. This activity brings joy and satisfaction to children. Children talk about their feelings, which arise when working with stones and other materials. The offered activities allow children to express their ideas and develop creativity.



- **Paleontologist camp**

At the beginning of the testing phase, we got acquainted with the life of dinosaurs in the "Dinosaur Museum" activity, studying the figures of different dinosaurs, grouping them, reading the big illustrated book "Dinosaurs".

In the course of the activity "**Making dinosaur fossils**", we drew a model of a dinosaur skeleton, made it out of plastic and cut out the bones of the skeleton from foam according to the template.

For the activity "**Discovering Dinosaur Eggs**", we placed small dinosaur figurines in balloons, filled them with water and froze dinosaur ice eggs.

In the course of the activity "**Searching for dinosaur fossils**", the children carried out digging operations with the help of shovels, rakes and brushes, placed the found fossils at the excavation site, assembling a dinosaur skeleton.

In the course of the activity "**Clementoni Archeofun T-Rex skeleton set**", children cut out dinosaur fossils from a plaster block with the help of a chisel and a hammer and assembled a whole skeleton.

Activity «**In search of insect fossils**» Before this activity in the spring, the children made insect prints from hard dough. When a new learning object appeared – Digging Area - the teacher hid the insect prints and offered the children to dig them up, study them, and identify what the insects are. The children used magnifying glasses and a microscope. They learned why such fossils can be found even today, and how it helps scientists. The children were asked to think about what the found insects might look like in reality, and the children painted the found insects with gouache paint. As a result, a very interesting and bright collection of insects appeared. During the digging process, live larvae were also found, which the children were very happy and amazed about.

THE SEARCH FOR DINOSAUR FOSSILS



Young paleontologists began excavation work.



Children find matching skeleton bones and place the findings.



All children are busy in digging, research work.



Young paleontologists can study, weigh, measure, compare, record data on observation sheets.

Clementoni Archeofun T-Rex Skeleton Set





Using a hammer and a chisel, the bones of the dinosaur skeleton are cut out of the block



Preparation for scientific research



Exploring insect fossils



As a result, a collection of insects appeared

RESULTS

Learning in nature provides an opportunity for children to acquire not only academic knowledge, but also to improve mutual communication, share personal experience, promote cooperation.

- The role of the teacher is the counselor and facilitator, the supporter of children. The teacher needs to observe the children's activities, document process using notes, a camera, a voice recorder to see the children's progress and plan future activities.
- Activities are more effective when children are working in small groups. You can divide the children into groups and give each group different tasks.
- Activities should be planned based on the interests and needs of children.
- As part of the project, the outdoor environment was designed, organized and supplemented in the preschool. To the already existing 8 areas, which were created in the previous Erasmus+ project Dehors, a new learning area called Digging Area was added, the idea of which we take from our Italian colleagues.
- A mutual understanding and knowledge of outdoor training has been created.

REFLECTION

Children have shown interest and participation when exploring Digging Area, engaging in activities with determination and creativity. The conclusion of the process is the acquisition of knowledge and skills, which will be related to the various topics covered. They got knowledge about paleontology science, dinosaurs, and developed their creativity and imagination.

It was valuable that the children were involved in creating Digging Area and making the paleontologist camp.

Working with natural materials brings children closer to nature, and also creates more interest in finding, collecting and using them.

These activities bring joy and satisfaction to children. Children talk about their feelings, which arise when working with stones and other materials. The offered activities allow children to express their ideas, develop creativity and curiosity.

The teaching team also supported this idea, because everyone remembered from childhood the feeling of joy and surprise when they found something in the ground.

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BEST PRACTICE, ITALY PEGASO PRESCHOOL



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IDENTIFIED ZONES

❖ *Sensory Paths*

The Sensory path is a zone that offers children opportunities to learn and develop with the help of all their senses. The word sensory is the study of what we can experience with our five senses. With sensory exercises, the child's different senses such as sight, hearing, touch, taste and smell are trained, developed and refined. The direct purpose of sensory education is to support the child's natural development and refinement of its five senses.

The idea for this zone comes from the training activity, observing sensory mandalas, and paths painted on the asphalt.

We have created sensory mandalas in the preschool garden together with the children, using natural materials. Furthermore, again with natural materials, we recreated the sensory mandalas on the walls of the labyrinth already installed in the garden.

In the asphalted area in front of the preschool entrance, we reproduced some paths painted on the ground in order to offer children new play opportunities, as well as to stimulate logical-mathematical thinking and language.



IDENTIFIED TOPICS

❖ *Creativity, Maths and Language*

We used different activities for creating mandalas, which the children could choose in order to reproduce the shape of the mandala first graphically, and then on a large scale. Subsequently, the children also got to choose which natural materials to place in the mandala. These materials were collected with the collaboration of the children's families.

The drawings of the paths on the asphalt were designed and created by teachers and children together, taking into account the interests of the children. Through these paths, we wanted to enhance an outdoor area that is currently less organised with specific centers of interest. These paths helped to provide the children with different activities that focussed on letters and numbers, supporting language and math skills.

Creativity is connected to children's activity in graphic representation of mandalas and to the choice of natural materials. Natural materials, as unstructured materials, favor children's divergent and creative thinking, opening up to different uses and different methods of investigation and construction. The paths, designed on the asphalt by children and teachers, offer children different activities that are useful for encouraging a playful approach to numbers and letters.

COLLECTED DOCUMENTATION ABOUT SENSORY MANDALAS

Graphic researches.

Children study the possible shapes of mandalas.



Graphic researches.

Children study the possible shapes of mandalas

The children's graphic research was supported by materials created by the french artist Hervé Tullet.

These materials were reproduced and recreated by teachers who proposed them to children in different activities during the school year.



Mandala creation.

Children create mandalas with recyclable and natural materials



Mandala creation.

Children create mandalas with recyclable and natural materials



Teachers and families together...

shared design and creation



New creative plays for children.



RESULTS

The children greatly appreciated the new play contexts, inventing games and sharing thoughts, ideas and skills with others. They had the opportunity to have more sensory experiences and more structured activities with the use of numbers and letters: these kind of activities support their narrative thinking (J. Bruner) and logical-mathematical intelligence (H. Gardner).

Families were involved in this entire research and design process: they were a very valuable resource both in the installation of the sensory panels and in the creation of the paths on the asphalt. They brought very interesting and creative ideas and for this reason the results of the project are the outcome of shared and co-designed work between children, teachers and families.

REFLECTIONS

The requalification and the design of some outdoor spaces allowed to set up new and interesting play contexts for children. The project has expanded the opportunities for play and experience in a stimulating environment that promotes children's wellbeing, social relationships, autonomy, and skills.

The project raised awareness among the teachers and pedagogical coordinator about the benefits of experiences in nature as a source of creativity and meaningful learning in different areas of development.

The project, in these two years, allowed to keep alive the reflection on educational practices. In this way, it nourished the dimension of reflexivity and collegiality, and encouraged a greater exchange and sharing among teachers. Teachers and the coordinator have organised several meetings to share and deepen the activities of the project, provide new food for thought, and allow for the project ideas to be achieved in the school garden.

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BEST PRACTICE, ITALY IL TRENINO BLU PRESCHOOL



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IDENTIFIED ZONES

❖ *Garden of all senses.*

The Garden of all senses is a zone where children can use all their senses and where the beautiful and functional can meet. Where aesthetics and tranquility can take place. The Sensory Garden is a place where children can marvel and where the connection between nature and man is made visible.

We chose this zone after observing the children's interest in taking care of plants and flowers. Therefore, we decided to expand and organize the space dedicated to the vegetable garden with the help of parents.

At the beginning, we prepared the soil for planting. With the children, we went to the weekly market to buy seedlings and seeds. Then, in small groups, we transplanted tomatoes, lettuce, carrots, strawberries, and mint, and sowed pansies. In the following days, the children took care of the seedlings by watering them and observing their growth. When the time comes, we will harvest our vegetables to enjoy them all together. Moreover, flowers and vegetables will be used for painting and creative activities.



IDENTIFIED TOPICS

❖ *Creativity and Science*

Regarding the topic of Science, taking care of the garden allows us to teach children the names of plants and the growth process from seed to fruit. As for creativity, we thought of using flowers and vegetables as stamps for painting. Additionally, we would like to create natural brushes with aromatic plants such as rosemary, lavender, sage, and mint. We thought children would enjoy creating mandalas with natural materials.

SCIENCE





In small groups, the children have sown pansies.



Observing their growth and what the garden gives.



Taking care of the garden, children learn the botanical nomenclature of plants and the growth processes from seed to fruit.

CREATIVITY



Painting with natural brushes, created from leaves and aromatic plants such as rosemary, lavender, sage and mint.



Painting with flowers.



Creating mandalas with natural materials.



Land art



RESULTS

The outdoor environment has supported teaching, helping to create a good relationship between all educators and children and developing collaboration among the children themselves. The oldest ones helped the youngest ones in the most complex activities, not excluding but involving them.

Children were directly involved by their educators in creating the various spaces of the sensory garden, learning to care for the plants and materials that compose it.

During the school year, children were able to follow the life cycle of plants and seeds in the garden. They saw tomatoes, broccoli, cabbage, strawberries, and carrots grow, which they harvested and cooked with the help of the cook.

The flowers and leaves of the garden were the protagonists of various painting and manipulative activities carried out during the year, such as: prints with flowers, mandalas with twigs, leaves, and petals, and collages with natural materials.

The children have shown themselves to be interested and participatory, taking part in the activities with commitment and creativity. At the end of the process, the children have acquired specific knowledge and skills related to the different topics covered.

The work on the outdoor environment has allowed the pedagogical coordinator and the educators to increase their skills in designing activities aimed at developing new knowledge, curiosity, and awareness in children.

Children's Involvement

We were able to observe that spending time in the outdoor environment provided a lot of opportunities for the children to experiment using their senses and imagination on a daily basis:

- sight: observing the birds and noticing how they are flying, ...observing the range of colours, the countless of the shades of flowers...everything from a different and interesting perspectives...
- touch: touching the ground, sand, stones, bark, leaves...
- balance: balance on the path of stones and bark...
- smell: smelling the wood and flowers, the fresh air after a summer rain...
- hearing: using a low tone of voice, differentiating the songs of the birds, sound of different materials. The sounds of the language and promoting the love of reading and nature by continuing the daily habit of reading by choosing books about the natural world and botany books...
- taste: savouring fruits, aromatic herbs, having a picnic.

REFLECTION

It is known that outdoor play and direct contact with nature reduces stress, strengthen the immune system, promotes the development of social and emotional skills and it improves the physical and mental health of children, increases their level of well-being while reducing frustration and aggression.

Outdoor education in “Trenino Blu” pre-school has always represented an indispensable education strategy complementary to indoor education, based about the observation that for children being outdoor is a natural condition, as well as an obvious pleasure about direct contact with the environment and its phenomenas. But the necessity to rethink and redesign school outdoors spaces in order to enhance the quality of education and create a more stimulating learning environment for children. For this reason, two years ago, we joined the ORE project. The redesign of physical spaces have been prepared together by the creation of tools allowing teachers to develop their skills and strategies about outdoors activities.

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CONCLUSION

The ORE project has been a valuable opportunity for exchange and sharing of experiences and good practices which can contribute to the improvement of the educational offert of the 0/6 Services.

The project gave educators the opportunity and conditions to acquire new knowledge and understanding about the importance for children of being in a well-thought outdoor environment that promotes development, learning, play and physical activity. An environment that offers a variety of materials and experiences where good teaching methods can give children opportunities to gain a deeper relationship with nature and knowledge about how to live in a healthier and more sustainable way.

CONCLUSION

During the training activities in Italy, Sweden and Latvia each partner exchanged points of view and opinions, collected ideas and identified good practices to be implemented in their own educational contexts. The project offered opportunities for mutual exchange, reflection on different educational systems and development of individual skills.

- **Children** developed greater personal and relational autonomy thanks to the new proposed activities that promoted research, exploration, creativity, observation and classification which constitute the basis of every learning path.
- **Teachers** improved greater awareness about nature and how it can be used as an educational resource. Teachers learned also how outdoor spaces can be promoters of discoveries and learning processes, by stimulating physical activity, creativity, hands-on activities, imagination and care of the environment.