Sensory trail as pedagogical action in early childhood education

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ABSTRACT
The present work began with a research project at the Municipal School of Early Childhood Education Meu Cantinho in the municipality of Rolante, Rio Grande do Sul. It is perceived that, over the years, the relationship between human beings and nature has been distancing itself. The theme of this research is related to the Environment and the learning of children of Early Childhood Education - Garden A, through a pedagogical dynamic called sensory track. It aimed to "provide students with the experience of perceiving elements of nature through the senses". With this pedagogical proposal, the students' senses were stimulated, generating a relationship of connection with nature, as well as it was possible to develop some skills, among them motricity, emotional, cognitive, observation and experience with the natural environment. It is observed that it is possible to unpair early childhood education with methodologies interconnected with nature.

Keywords: Nature Deficit, Environment, Apprenticeship.

1 INTRODUCTION

One of the reasons for conducting a trail is that, at the end of its course, participants understand the differences between the various elements of nature and the importance of preserving and caring for the environment. In this sense, Pfeifer *et alii* (2016, p.5) state that

> In natural areas, the trails perform important functions and, among these, stands out to connect visitors with the place, creating greater understanding of natural and cultural resources; They provoke changes in attitude, attracting and involving people in the tasks of conservation of the environment.

In this way, the proposal of the sensory trail also aimed to develop the sensory and motor skills of the students, in addition to providing a unique experience in contact with nature.

There are many forms of trails and usually the best known are the ecological trails, those that take us to beautiful landscapes, usually to the waterfalls, the forests near the school or the rivers. There are several environments that are possible to be carried out the trails. There are those in which sensitive trails can be performed with the elderly to stimulate the senses and stimulate a relationship of these with nature. In this case, the place can be in the countryside or you can also adapt the trail in some garden of the house, where we can also adapt trails with the purpose of accessibility for those who

need it. The urban trails, in turn, would have the purpose of knowing the social problems of the community, provoking reflections on human actions, which are disconnected from the defense of the Environment.

Authors such as Silva and Silva (2020, p.13) state that "people's awareness of environmental problems can be done in a differentiated way, through the stimulation of the senses, in order to approach and increase the bond between the human being and nature". When it comes to perceptive and interpretive tracks, Silva and Figueiredo (2020, p.17) state that "they can be considered an EE tool in the search for the awareness of the population about the problems related to the environment, being a great bet on the (re)construction of the bonds of the human being and the environment in which they are inserted".

The experience through the sensory trail broadens the students' knowledge, with regard to the perception about themselves and nature. In addition, direct contact with nature or with elements of it develops a connection of admiration and respect for the Environment.

Araújo and Farias (2010, p.1) when discussing the theme, state that the tracks "aim not only at the transmission of knowledge, but also provide activities that reveal the meanings and characteristics of the environment through the use of the original elements, by direct experience and by illustrative means". The trail is, then, a basic instrument of outdoor education programs", unpairing the classroom and exploring the surroundings of the school, as to the ecological and cultural aspects.

Connecting to nature is just as important as protecting ourselves, as it is our existence that is at risk. However, many prefer to think that this is not an issue or a problem, and therefore continue not to question the fact that we depend on the preservation of the Environment for the present and future of our children. In this sense, Krenak (2020) in his interview for the *UFRGS online* newspaper assures that the moment of the "pandemic was seen, mainly, as a 'terrible threat against the human'. Of course, the human was so comfortable in the place of dominant that a virus destabilized that tetric confidence. It broke that trust" (y/n).

In this way, we need a change in the way we perceive and act on the environment in which we live. We know that education is the best way for this to occur, from the change of mentality, to leave the comfort zone and go to actions of protection and greater connection with the natural environment.

The role of the school goes far beyond teaching to respect nature: it should make us restless, dissatisfied, so that it makes us act promptly and as another member of Mother Earth. Therefore, it is up to teachers to involve students in projects to protect the environment and raise awareness regarding preservation from the beginning of schooling, that is, in Early Childhood Education.

It is in this direction that Vasconcellos (1997, p.269) affirms, because "there is no Environmental Education without the reflection on the relations of beings among themselves, of the human being with himself and of the human being with his fellow beings is not present in all

educational practices". Therefore, we believe that the relationship with nature leads us to a search for understanding the need to preserve the Environment, to a notion of belonging, so that we can seek a better quality of life for all.

In addition, nature-related projects can extend to the school environment and can occur in spaces in the city or region throughout the school years. It is pertinent that the projects involve families and the school community, because the involvement of these agents are important to renew this connection that we have lost over time, thus creating a new connection beyond respect for nature: a connection of sensitivity and belonging.

In the perception of Chimentti and Cruz (s/d), the researchers emphasize that a sensory garden is intended to promote

> Space of pleasure and leisure for all users, merging a paradigm of dream and reality. Through the sensory gardens, one can travel back in time, experience different sensations, promote encounters and get in touch with nature in its most exuberant expression (s/p).

In this way, we realize that the contact with the external environment generates unique sensations, such as, for example, when they feel the perfume of nature, the teas that were on the trail, the temperature of the soil and the texture of the dry leaves. It is necessary that the school curriculum contemplates activities related to the Environment, so that schools create projects in which students not only have contact with nature, but are interested in knowing and learning about it.

In the document National Common Curricular Base – BNCC, when it refers to the field "explore", we find the elements of nature. That is, it is necessary to initiate contact with nature from Early Childhood Education and, in this case, it begins with

> movements, gestures, sounds textures, colors, words, emotions, transformations, relationships, stories, objects, elements of nature, in school and outside it, expanding their knowledge about culture, in its various modalities: the arts, writing, science and technology (BRASIL, 2018, p.3).

We can and should develop in students an interest in the subject, so that the will to care, protect and connect with nature can be awakened. It is believed that the school has a role of transforming agent in the life of each student, which goes beyond curricular learning, thus leading to important reflections and creating a thinking and active being in society. Rodrigues and Saheb (2015), when discussing the subject, states that

> it is necessary that in Early Childhood Education and in all other school levels, there is an optics that includes Environmental Education, because the human being, knowing the natural sciences, integrating himself in nature and humanity and recognizing himself as part of society, begins the constitution of his human condition (p. 186).

Currently it is essential that the school environment contemplates the knowledge about

Environmental Education so that students develop activities to raise awareness of the Environment. Thus, in the future, when they become adults, they will have subsidies to be responsible and committed to the care and preservation of nature.

Through contact with elements of nature in the school space, children will understand the importance of preservation and then build the feeling of belonging, learning from a young age how to care for and preserve nature.

The document National Curricular Guidelines for Environmental Education – DCNEA, of the National Council of Education, in the item "2-Merit", with regard to the objectives, stands out the one that indicates "systematize the precepts defined in Law n.9.795/1999" with a view to the "advances that have occurred in the area so that they contribute to ensure the human formation of concrete subjects who live in a given environment, historical and socio-cultural context, with its physical, emotional, cultural and intellectual conditions".

In this perspective, Rodrigues and Saheb (2018, p.580), assert that "the constitution of the human condition of the individual is linked to his relationship with the world, because he needs to perceive himself as a human being and live with the beings that surround him, learning to respect his individuality and that of others." In addition, the authors state that there is a need to learn to perceive, because "opinion can be different and that each one has their way of acting and thinking", thus favoring a mosaic of actions and ideas.

And yet, the document attached to the DCNEA, "Draft Resolution", establishes objectives of the EA to be observed by educational institutions, from basic education to teaching to graduate studies. Article 3: " Environmental Education aims at the construction of knowledge, the development of skills, attitudes and social values, the care of the community of life, justice and socio-environmental equity, and the protection of the natural and built environment." The 4th article presents the interaction between living beings. It says that "Environmental Education is built with citizen responsibility, in the reciprocity of the relations of human beings among themselves and with nature."

In understanding the above, the school environment has a transformative role in the lives of students and it is pertinent that it allows them opportunities for inquiry, research and exploration of the theme so that they develop interest in projects to preserve the Environment. In the case of school institutions, Paulo Freire (1996, p.2), states that the

> Pedagogical practice, in this transformative vision, is sustained by the action of the teacher, so that his activities make the student establish significant relationships and appropriate the socially constructed knowledge, giving them meaning in the context in which he lives, because "teaching is not transferring knowledge, but creating the possibilities for its production or its construction.

Thus, the school, by offering Environmental Education activities, promotes the establishment of these students' connection with nature, providing opportunities for projects outside the classroom or

school environment. It is up to education professionals to change the impregnated concept of the classroom. In this line of thought, Prigol and Behrens (2020, p.15) highlight that education is always in motion, shaping and modifying itself in constant construction of knowledge, in a "sense of movement leads to the understanding that all action and reaction in education do not occur linearly", since knowledge, according to Morin (1999, p.116) is in motion, "a knowledge of back-and-forth, which progresses from the parts to the whole and from the whole to the parts; which is our common ambition."

We understand that the school should establish a relationship of interest of the students for the theme Environment, with practices that make them curious about the theme, creating enthusiasm in the activities. It takes attention and dedication for us to take action. In this sense, Boff (2012, p.37) "understands that caring is more than an act; It's an attitude. Therefore, it encompasses more than a moment of attention, zeal and care. It represents an attitude of occupation, concern, accountability and affective involvement with the other".

In this sense, Luccas (2016, p.69) tells us that the school

> it is a place of experiences and experiences of children in the process of formation of human qualities, of development of their intelligence and personality, that is, of formation and development of the capacities and abilities necessary for the constitution of a new form of relationship between human being-society-nature: the appropriation of the knowledge historically produced by humanity and the formation of a mature personality, stable and supportive.

Through the knowledge acquired in the school environment, it is possible for students to develop some measures of nature preservation, capable of expanding and modifying the place where they live, transforming the local reality through small attitudes, thus causing a great difference initiated from a simple change of perspective or with important actions for the future of the place in which we live. For this, it is essential that the school broadens the student's view of the importance of the theme and allows students all the necessary input so that actions can be put into practice. On the subject, in the words of Gerhardt and Silveira (2009),

> Knowledge as a form of problematic solution, more or less complex, occurs around the ebb and flow in which the basis of idealization, thought, memorization, reflection and creation takes place, which happen with greater or lesser intensity, following chronological parameters and consciousness of the reflected and the unreflected. Knowledge is a dynamic and unfinished process, it serves as a reference for both qualitative and quantitative research of social relations, as a way of seeking knowledge proper to the exact and experimental sciences. Therefore, knowledge and knowledge are essential and existential in man, it occurs among all peoples, regardless of race, belief, because in man the desire to know is innate (p.17).

Emphasizing, therefore, that the construction of knowledge applies to the experiences lived through the opportunities of construction of development. In addition, activities involving nature should be applied, promoting social interaction, developing interaction with nature and establishing a

relationship of respect and future interest in its preservation.

Environmental Education is fundamental nowadays for students to realize the importance of preserving nature and reflecting for changes in the daily actions of society. In this sense, Souza (2014), assures us that Environmental Education "is a process in which people are encouraged to think reflexively and critically" (p.241). And so, Oliveira and Toniosso (2014, p.36) announce that "the intention to investigate the presence of nature in Early Childhood Education schools is evidenced by considering the contact with the fundamental environment, being the same in early childhood".

Thus, the relevance of the insertion of children in the external space in contact with nature for their development is considered. In this perspective, Soares and Flores (2017, p.122) assert that

> The professionals who work in Early Childhood Education need to think and organize the courtyards and squares with the understanding that the external environment is essential for the growth of children, because it provides several possibilities of learning from the games and interactions that can occur there, when this space is pleasant, and rich in alternatives that guarantee contact with nature and the opportunity for creation and imagination.

In similar research, Cavalcante and Ferreira (2021, p.6) reiterate that "in the conception of Maria Montessori, a well-prepared environment helps students, so that they can develop the activities, with intelligences in a very playful way, is essential for their development." The authors add that

> one of the ideas of Maria Montessori is that the important thing is not to teach, but to give conditions for learning to happen in a playful way. Play is a social learning, the games of the adult with the children are essential and this makes the child think and experience many aspects (CAVALCANTE; FERREIRA, 2021, p.7-8).

Thus, it is believed that the school environment needs to provide playful spaces for the development of the child. In addition, the external environments in contact with nature are fundamental so that the child can use his imagination from the creation of games related to nature.

The school environment is necessary in the development of projects through active participation and commitment of students to reverse all the damage caused to the Environment by previous generations through a construction of joint actions between school and society.

2 METHODOLOGY

The field research was done through the construction of a sensory trail with elements of nature. The trail was assembled/created as follows: made with cardboard boxes, in which each box had an element of nature. One box was filled with medium-sized and rounded stones, the other box with white sand, one with dry leaves, the other with green leaves, and one with black earth, which was still moist. The trail was developed with cardboard boxes decorated with colorful activities in previous classes by the students themselves, and the boxes were arranged in a straight line, where each student, blindfolded, walked slowly in each box, with the help of the class teacher to the end of the trail. The

other students sat at the side of the trail, waiting for their moment to follow the planned path. It was held in the schoolyard. The children walked through the boxes that were the said elements of nature. The children were blindfolded so that they had contact with the objects through touch, smell, sounds and different textures.

3 RESULTS AND DISCUSSION

Through the observations, it was noticed that the students of Jardim A do not have a schedule for physical education. They only leave the classroom when they can go to the schoolyard, on sunny days and only for a few minutes when they play in the school square. On cold or rainy days, children stay all the time inside the classroom, developing various pedagogical activities.

The activity was elaborated in the schoolyard, on a sunny morning, where five boxes were arranged in a straight line, with objects of different texture and temperature: sand, black earth, stones and dry leaves. It was possible to notice the smile on the faces of the students in each exchange of boxes.

After the completion of the journey by all students in the class, we removed the blindfolds and asked them to use the perception of touch, placing their hands on the objects, as recorded in Figure 1.

Figure 1 - Image of the trail being walked by the students

Source: The Authors (2022)

The proposal was developed with the aim of providing students with the experience of perceiving elements of nature through the senses. In addition, we sought to provide a practice related to nature with a differentiated practice, in which the students were blindfolded, where they would be concentrated on the path and textures.

The receptivity of the children was such that, after the completion of the activity, the students asked to repeat the experience and, this time, without the sales. At that time the goal was to develop visual acuity. We then asked them to touch their hands on the objects, as shown in Figure 2. So they

sat next to the boxes and touched the objects. It was very emotional to witness the reaction of the children: the sparkle in their eyes and the smile on their faces. They had a lot of fun with the novelty and sensations of kneading and tearing the dry and green leaves, immersing their hands in the sand, feeling the texture and weight of the stones.

About this period, the children of early childhood, Louv (2016) argues that it is at this stage that the child acquires empathy with nature. For the author, when there is contact with the natural environment, "they make ready use of their keen sensory abilities to notice and categorize elements of the natural world" and also develop "keen sensory skills, including sight, hearing, smell, taste and touch" (p.95).

As he walked along the trail, the student changed his countenance at each box change: the feeling of surprise at the box changes was visible at the time of the experience. In the research of Lea Tiriba (2022), today's children do not play like their parents and teachers. They don't know how to climb trees, they don't take rain showers, they don't get dirty in the sand or in puddles. They are protected so as not to get dirty.

Figure 2 - Hands on the elements of Nature

Source: The Authors (2022)

After appreciating the objects, we returned to the classroom where we sat in a circle to evaluate the experience. In a round of conversations, each child told about their sensations when passing through the trail with closed eyes and when visualizing the elements of nature. He highlighted the element that was most significant, the interest in repeating the practice, the most relevant sensations and the surprises of the activity. Summarizing, the students had similar responses about their perceptions. In addition, in their reports, it was found that it was very significant. The objects they appreciated the most were the sand and the dry leaves, due to the texture. Thus, the most relevant part of the activity was touch; the temperature of the sand, which they reported to be cold and, for some,

icy. The texture that least caught their attention was that of the stones, as they reported being very firm.

The little contact of families with nature allows the school to promote the first interactions with such objects, because the children live in urbanized and well-sanitized places. The class also hadn't tried activities blindfolded. In research by Louv (2016) this contact with nature on the part of parents is reducing considerably in relation to their time as a child. Today's children have restrictions on green areas and more conserved places. The most that some frequent are the parks and the lawn of their residences. In the practice of Cornell (1997) it is providential to have outdoor activities because it promotes the expenditure of energies so present in children.

For Louv (2016, p.57) children have "nature deficit" has increased, because there are indications that it can contribute to the increase of ADHD symptoms and hyperactivity. Exposure to nature can contribute to "improving children's cognitive abilities and resistance to stress and depression," so common in our day.

The activity exceeded our expectations, in addition to the satisfaction of the duty fulfilled, with the certainty of the relevance of the activity for the well-being of the children, for the initiation of a more satisfactory relationship with nature so that it was possible to envision a construction of a greater connection with the Environment, in addition to the skills that are important for the development of childhood in school.

4 CONCLUSIONS

The intention was to provide them with a unique experience, built with elements of nature – sand, dry leaves, green leaves, stone and soil. Thus, we work the exploration of the senses, the perception of textures, through touch, pressure, smell and vision.

We found that when they returned from this moment with the play in the external environment, they became more attentive and willing. Therefore, we understand that this external contact is very important for children and, for this reason, we insist on school practices that connect the student to the Environment. We know the difficulties that schools face, but we need to look for alternatives to make this reality possible for students of Early Childhood Education, that is, to unpair the school.

Currently, we can see that education is based on methodologies aimed at the classroom, with reduced pedagogical practices that use external spaces. Although we know the current difficulties that many educators have in most school spaces, we realize that children prefer outdoor classes, with directed or free play. We believe that this contact with nature is fundamental even in early childhood.

The idea of the development of the sensory trail being constituted only with elements of nature arose from an affliction in verifying that the children of early childhood education have few possibilities of activities in this external space, that is, the little contact with nature. Thus, through the sensory trail, in addition to the development of psychomotor skills, spatial and sensory notion, they

had the opportunity to create a connection with nature, developing a relationship of respect, admiration and care for the Environment.

Thus, we think that including this practice in the methodology of Early Childhood Education schools would be a possibility to make possible the connection of students to the environment, expanding their experiences and learning. Thus, projects aimed at the collective consciousness can be developed. The example has a transformative role: if the little ones are playing a role with attitudes of preservation and care, the family and society will become more active in this project.

Within the school environment can be developed projects that arouse the interest and daily care of the student, such as medicinal gardens, implementation of composters, separation of organic and non-organic waste through ecological dumpsters, planting of various types of vegetables and many other practices.

In early childhood education, the school can develop projects outside the school environment, in conjunction with the city's Department of the Environment. With older students, do a research study, to know what the main needs of the region and what improvements can be made, bringing benefits to the entire local population, meeting some demands of the region and society in relation to the Environment and, thus, students will be acting directly in the preservation of nature.

Small actions can make a difference in the future from projects of planting native or fruit trees that, in the future, can be planted on the slopes of rivers, or even become shadows in places scattered throughout the city.

We think that sensory trails can be an easy and viable alternative for schools, as they do not require very large spaces, nor the climate. These can even be elaborated, with some adaptations, in the classroom itself. In addition, as only elements of nature are used, which have low cost, there can be easy access to these elements and, in this way, will be contributing to the school curriculum.

In addition, we believe that the school will be acting directly on the sensitivity of the students' families and local society, regarding the care and preservation of the Environment, expanding views through examples and attitudes. It will also encourage students to be more attentive to nature care. These small actions can have a positive impact on the entire local society.

The sensory trail developed in the school generated a connection of the student with the elements of nature. The touch, the smells, the feeling of being blindfolded transformed that moment of the students. The elaboration of trails in the school generated well-being in the students, awakened sensations through the path. The school that uses the trails as a pedagogical practice, will be adding to its students unique sensations, creating links with nature and also helping its student to know how to perceive details that make a difference in their relationship with nature, in addition to their sensations and emotions.

The blindfolded trail, in silence, allowed the students a unique moment where they needed

concentration and balance. So we see surprise in the looks at each change of box with another element, with each change of texture. The purpose of the activity was to create the opportunity to establish a relationship of the student with nature, a sensory experience where the student could connect with his body, walk without looking, feel the different textures and temperatures, and to know the elements through which he passed, to thus establish a relationship of care and attention with the Environment.

The learning contributed to develop sensory perception, generated a curiosity of the students for the elements of nature, created in them the desire to repeat the route several times. Thus, we believe that schools could experience this activity with Early Childhood Education, providing a differential of low cost and with great pedagogical experience and broad sensations and emotions, promoting a brief relationship with the Environment.

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