



Universidad Pública de Navarra  
Nafarroako Unibertsitate Publikoa

FACULTAD DE CIENCIAS HUMANAS,  
SOCIALES Y DE LA EDUCACIÓN

GIZA, GIZARTE ETA HEZKUNTZA ZIENTZIEN  
FAKULTATEA

**Graduado o Graduada en Maestro en Educación Infantil**  
*Haur Hezkuntzako Irakaslean Graduatuta*

**Trabajo Fin de Grado**

***Gradu Bukaerako Lana***

**FOSTERING ENVIRONMENTAL PRESERVATION  
THROUGH EXPERIENCES IN NATURE IN EARLY  
CHILDHOOD EDUCATION**

**Estudiante: Miren Elorz Hernaez**

**Enlace video:**

Tutor/Tutora: Maria Napal Fraile

Departamento/Saila: Ciencias/ Zientziak

Campo/Arloa: Didáctica de Ciencias Experimentales

Mayo 2022

## **Abstract**

It has been proven that investing time in nature has numerous benefits for humans and that preserving it is becoming increasingly important. Considering that we are responsible for the environment we build and maintain, it is essential to analyze how the desire to preserve nature and the environment arises. As a result, the objective of this study is to see if providing children with environmental experiences can have an impact on them, making them aware of the problem we face today and motivating them to solve it. To attain this purpose, qualitative research was conducted with a group of seventeen children in the age range of four to five years, in which experiences have been carried out both inside and outside the classroom. The students' attitudes have shifted throughout the course of the proposal's ten weeks toward more pro-environmental behaviors and a greater understanding of the natural components around them. Since today's generations represent the society of the future, it is vital to consider children as agents of change.

**Key words:** Early Childhood Education, experiences in nature, Environmental Education, Environmental identity.

## **Resumen**

Se ha demostrado que invertir tiempo en la naturaleza tiene muchos beneficios en las personas y que además, cada vez es más urgente el cuidado de esta. Teniendo en cuenta que el entorno que construimos y mantenemos depende de nosotros, es necesario analizar cómo surge el deseo de preservar la naturaleza y el medio ambiente. Por lo tanto, el objetivo de este proyecto es analizar si disfrutar de las experiencias en la naturaleza que se les proporciona a los niños puede tener un efecto en ellos, hacerles tomar conciencia del problema que tenemos hoy en día y querer resolverlo. Con la finalidad de alcanzar este objetivo, se ha llevado a cabo una investigación cualitativa con un grupo de diecisiete niños de un rango de edad de entre cuatro y cinco años, en la que se han efectuado experiencias tanto dentro como fuera del aula. Durante las diez semanas de la propuesta los alumnos han ido mostrando un cambio en sus actitudes hacia comportamientos más proambientales y una mayor conciencia acerca de los elementos naturales de su alrededor. Es necesario considerar a los niños como agentes de cambio ya que las generaciones de hoy en día son la sociedad del futuro.

**Palabras clave:** Educación Infantil, experiencias en la naturaleza, Educación Ambiental, Identidad Ambiental.

“Passion is lifted from the earth itself by the muddy hands of the young; it travels along grass-stained sleeves to the heart. If we are going to save environmentalism and the environment, we must also save an endangered indicator species: the child in nature.”

— Richard Louv

## INDEX

INTRODUCCIÓN	3
1. THEORETICAL FRAMEWORK	5
1.1. <b>The effects of experiences in nature on children</b>	5
Nature-Deficit Disorder	6
Benefits of being in nature	7
<b>Attitudes that knowledge of nature generates</b>	9
<b>Environmental education</b>	12
RESEARCH QUESTION	16
METHOD	16
<b>Contextualization</b>	17
Research	20
Sequence of activities	20
<b>RESULTS</b>	<b>24</b>
DISCUSSION	35
CONCLUSIONES	37
FUTURE RESEARCH	38
REFERENCES	39
ANNEXES	45

## INTRODUCCIÓN

Este proyecto se centrará en cómo las experiencias de primera mano en el entorno natural conforman la identidad medioambiental de los niños y niñas, y si se correlaciona con la inclinación a preservar el medio ambiente. Se llevará a cabo en el segundo ciclo de la etapa de Educación Infantil.

La naturaleza y el medio ambiente son uno de los objetivos de esta etapa: el currículo de la Educación Infantil incluye referencias al conocimiento del medio, que se basan en la identificación, observación, curiosidad, respeto y cuidado hacia los elementos del medio natural. Sin embargo, la naturaleza, además de ser un área del currículo, también está a nuestro alrededor y, por tanto, también forma parte de nuestras vidas. A esta edad, los niños y niñas quizás no son capaces de realizar razonamientos complejos, pero sí de aprender y empaparse de lo que tienen a su alrededor. Además, el entorno tiene un gran efecto sobre nosotros porque los elementos que podemos encontrar en él nos crean una serie de emociones, positivas o negativas, que modulan nuestras acciones. Esto nos lleva a preguntarnos si las experiencias en la naturaleza que se les proporciona a los niños pueden tener un efecto en ellos, hacerles tomar conciencia del problema que tenemos hoy en día y querer resolverlo. Esto es relevante porque la situación actual hace cada vez más urgente el cuidado del planeta. El entorno que construimos y mantenemos depende de nosotros, por lo que es necesario analizar cómo surge el deseo de preservar la naturaleza y el medio ambiente.

En este punto, el reto para los educadores es promover la adopción de medidas y considerar a los niños como agentes de cambio. Y, además, crear un compromiso individual con el medio ambiente y su preservación. Es decir, el compromiso con la naturaleza no debe responder a un compromiso extrínseco con los profesores o los padres (pensando "voy a tirar el plástico en el cubo de basura amarillo como me ha dicho la profesora"), sino a una creencia intrínseca ("voy a tirar el plástico en el cubo de basura amarillo porque no me gusta ver plástico en el parque").

Este cambio y esta mentalidad deben comenzar desde los primeros años. A esta edad, la base de la estructura de los niños y niñas se crea por imitación: como explica María Montessori, en esta etapa absorben el entorno, encarnando en sí mismos las cosas que ven y oyen y pasan a formar parte de su psique (Montessori, 2014). Por eso, este tipo de experiencias a una edad temprana son esenciales.

Aunque hay una tendencia a esperar mucho del aprendizaje formal que ocurre dentro del aula, muchos otros escenarios y situaciones también podrían generar un aprendizaje significativo, como la naturaleza y el medio ambiente en general. Por básico que parezca, muchas personas (y

muchos niños) no tienen regularmente la oportunidad de pasar tiempo al aire libre, en entornos naturales. Además, para el alumnado que pasa muchas horas dentro del aula, estar al aire libre puede ser motivador y tener muchas otras ventajas: Pueden descubrir cómo se sienten y qué efecto tiene sobre ellos, desarrollar más profundamente sus sentidos con las propuestas que ofrece, ser conscientes de otros seres vivos, desarrollar capacidades como la creatividad jugando con diferentes materiales, etc.

Por ello, es esencial que la escuela proporcione a los niños experiencias regulares fuera de sus muros. No todas las zonas de la ciudad tienen una proporción similar de espacios verdes, por lo que no todos los niños tienen las mismas oportunidades de pasar tiempo en entornos naturales. En consecuencia, es importante que las escuelas introduzcan actividades al aire libre en su horario habitual o, en su defecto, creen dichos espacios, utilizando plantas, césped, huertos y materiales naturales (madera, conchas y piedras), rodeados de luz natural.

En resumen, las nuevas generaciones son el futuro y el mantenimiento del planeta depende de todos nosotros. Es fundamental que desde pequeños tomen conciencia de cómo se sienten en él y del valor de proteger el medio que les rodea y de preservar la riqueza natural que nos ofrece nuestro entorno. La cuestión que queremos abordar aquí es si disfrutar de experiencias en la naturaleza puede ser un modo de conseguir involucrarnos más en la preservación.

## **1. THEORETICAL FRAMEWORK**

### **1.1. The effects of experiences in nature on children**

Positive childhood experiences in nature have been linked to the emergence of adult environmental concern and participation in pro-environmental behaviors in several studies (Cagle, 2018). Adults who spent time in nature as children are more interested in nature-based recreation activities, visiting green areas and concern for the natural world (Chawla, 2007; Thompson, Aspinall, & Montarzino, 2007).

Children's interaction with the elements of the environment is an essential process for their social and personality development. In infancy, the stimulation of sensory, affective, motor, and cognitive capacities stands out (Cabello, 2011). There are many ways to promote such contact with the environment. Nature based early childhood programs, for instance, can offer direct, nature-rich experiences with a range of objectives, including acquiring basic appreciation for the natural world (Larimore, 2016).

#### **1.1.1. Nature-Deficit Disorder**

The scenario of children's disconnection with nature and the outdoor environment has a negative effect on children's development and well-being.

With the term "Nature Deficit Disorder" the author of *Last Child in the Woods: Saving our children from nature-deficit disorder*, groups together a set of ailments such as depression, stress, attention deficit, hyperactivity, or anxiety, whose common cause could be the lack of contact with the natural environment. The intention is not to use it as a way to diagnose, in a scientific sense, but as a reflection that can help to understand and solve the difficulties of today's youth.

Since the development of urbanization and the appearance of new technologies, the concept of play has changed and its practice is decreasing. On the one hand, natural spaces are becoming more and more distant. On the other hand, due to new technologies, society is developing in a way where everything has to be immediate, leaving no space for pauses or play. In this reality, a concern arises on account of the Attention Deficit Disorder (ADD) symptoms growth at younger ages. In addition, more and more children suffer from obesity. Lack of movement and abuse of technologies seem to be the most obvious reasons (Díaz & Aladro 2016). Children see themselves separated from the natural world when they have less real contact with living things and obtain most of their experience through electronic media (Cohen & Horm-Wingerd, 1993). Some authors go further as

Richard Louv (2005) who coins the term "nature-deficit disorder" and points out that this is caused by the lack of activity in nature.

Children in the industrialized world may live at a great distance from natural settings. There, besides reduced contact with "wild" nature, they face widespread environmental issues such as air pollution, water and soil contamination, abuse of exhaustible resources, species extinction, and a lack of green spaces or nature reserves. These circumstances may make it even harder for people to identify or attach with nature than was previously the case (Clayton & Opatow, 2003).

Apart from that, the current generation of children plays outdoors less often and for less time than their parents' generation (Veitch, Bagley, Ball, Salmon, 2006). Children's physical activity is turning away from unstructured and unsupervised outdoor play toward sedentary, structured, supervised activities that are primarily performed indoors (Valentine, McKendrick, 1997). Prioritizing academic achievement, that is, enrolling children in a multitude of extracurricular enrichment activities, has left children with little unstructured time (Gray et al., 2015). This also implies that children do not develop the ability to measure danger because they do not have the opportunity to judge their abilities in an open space without parental supervision.

### **1.1.2. Benefits of being in nature**

Being in contact with nature has many benefits for children. The benefits are at different levels, that is, mental, physical and ethical.

As for the mental ones, immersion in nature as a therapeutic method in pediatrics has given, in the worst case, null results and has shown, however, efficacy in stress control and Attention Deficit Hyperactivity Disorder (ADHD), also finding a correlation with improved learning (Calvo-Muñoz, 2014), in addition to helping reduce and treat depression (Louv, 2005). In general, individuals who are connected to nature are more likely to be flourishing and functioning well psychologically (Pritchard et al., 2020). On the other hand, nature exposure also has cognitive benefits, such as improved executive functioning, memory, attention, and ability to reflect on a life problem (Dadvand et al., 2015; Kondo, Fluehr, McKeon & Branas, 2018), as well as socioemotional benefits, such as those related to emotional regulation and improved mood and social skills. It also influences the improvement of self-esteem. (Tillmann, Tobin, Avison, & Gilliland, 2018). A study conducted in the United Kingdom shows that 8-year-old children have a greater knowledge of Pokémon drawings than of wild species; therefore, the direct experience of the natural environment may also help them gain knowledge about the world around them (Torres-Porras et al., 2016).



Contact with nature includes physical benefits: increasing outdoor time could be an effective strategy for limiting sedentary behaviour and increasing physical activity, energy, fitness in children and improve health (Gray et al., 2015; Kondo, Fluehr, McKeon, & Branas, 2018; Twohig-Bennett & Jones, 2018). Natural environments offer greater opportunities for unrestricted physical movement, which decreases the likelihood of obesity (Moore, 2003).

In terms of health benefits, increased exposure to natural spaces was associated with reduced odds of mortality. This is due to the concentration of ambient air pollution that can cause respiratory problems (Takano, Nakamura, Watanabe, 2002). In a single case-crossover study, Gronlund et al. (2015) found that the odds of cardiovascular mortality were higher among individuals living in zip codes with low amounts of green space.

Finally, ethical benefits have also been found. Children who have more positive and enriching experiences in the natural world are more likely to become better-informed adult consumers and savers who are environmentally alert to their lifestyles and practices (Veselinovska, Petrovska, & Zivanovic, 2010). Moreover, they develop the courage to handle challenges, problems, investigations, and just manageable risks. And this way, children are encouraged to build a sense of caring about the Earth and the need to act responsibly toward it (Wilson, 1984).

## **1.2. Environmental identity**

Our relationship with nature is not only a factor in our health and well-being, but it also shapes who we are and how we position ourselves in the world. In other words, our identity or, specifically, our *environmental identity*.

*Environmental identity* is how people interpret themselves in relation to the Earth, as manifested in personality, values, actions, and sense of self (Thomashow, 1996). It is a part of how people form their self-concept, a sense of connection to some part of the non-human natural environment, based on history and emotional attachment, which affects how we perceive and act toward the world. Therefore, the environment is important to us and an important part of who we are (Clayton & Opatow, 2003). The ecological worldview that is realized can be used to interpret personal experience, and that interpretation leads to new ways of understanding personal identity (Thomashow, 1996).

People have become more conscious of how vital it is for them, and for others who identify with different places, to have a feeling of belonging to a place. Feeling physically, emotionally, and spiritually attached to a place fosters a sense of responsibility for it, as well as a greater

understanding of ourselves within the ecological domain (Mackey, 2015). A sense of belonging to nature is essential for emotional balance. Birdsong, buzzing insects, gently swinging leaves, and the trickling of water in a forest may all imprint the beauty of nature in our minds. Recalling the beauty of nature at key life milestones can enable us to slow down the pace of daily living by removing ourselves from the technologies of modern society (Kobayashi, Ueoka & Hirose, 2008).

Studies have shown that *Nature Connectedness* tends to be greater in people who have previous (childhood) experience of nature (Hinds & Sparks 2008). This is important for the development of emotional bonds and identification with the environment from a young age, which leads to positive psychological well-being and the formation of positive attitudes and behaviors toward the natural environment (Hinds & Sparks, 2008). An environmental identity can be developed and used to inspire preservation behavior when the natural elements that are protected, are connected to the self, allowing motivation to be internal rather than external (Clayton & Opatow, 2003). Therefore, feeling deeply connected to nature influences how individuals treat it and has consequences for enhancing pro-Environmental Behaviours and biodiversity protection (Whitburn et al., 2020). Moreover, people's attachment to specific areas in their community is an important motivator for them to express their concerns about local issues and solutions, as well as to stay and fight, rather than escape, in order to preserve, protect, or enhance the community and its territory (Mihaylov, & Perkins, 2014).

There are some factors that affect *Nature Connectedness*:

Environmental quality is one of these, influenced by biodiversity and the aesthetic appeal of the environment. Visits to environments with higher species richness and abundance (or perceived to be higher) and the absence of litter and degradation may have a greater favorable impact on people and therefore be considered higher quality. (Wyles et al., 2016 in Wyles et al., 2019). On the other hand, connectedness to nature has been shown to be greater in females (Cervinka et al., 2012 in Wyles et al., 2019). Finally, this effect can also be linked to the activities that people participate in. Short distances to the location, as well as visiting nature alone, have been associated with better psychological repair than visiting nature with a companion (Wyles et al., 2019).

The neuroscientist Antonio Damasio in his book *El error de Descartes*, explains that emotion allows us to mark things as good, bad, or indifferent (Damasio, 1994). Whatever the environment makes us feel, we will qualify it in one of these three ways. And those feelings tell us whether we maintain the state we are in or make a change by deciding the best course of action (Clear, 2018). How nature makes us feel will cause us to act one way or another as far as nature is concerned.

Therefore, encountering a dirty environment, with noise pollution and no green spaces can generate an unpleasant feeling and a desire to change it, on the contrary, green and pristine spaces, the desire to preserve.

### **1.3. Attitudes that knowledge of nature generates**

The feelings that nature generates in us are not only based on the feeling of belonging to a place. *Biophilia* is a term used to describe a natural human desire to interact with nature (Schiebel et al., 2022). Children have an innate and genetically predisposed tendency to explore and bond with the natural world known as *biophilia*, i.e., a love of nature (White & Stoecklin, 2008). Children experience the natural environment differently than adults, they judge nature not by its aesthetics, but by the manner of their interactions and sensory experiences with it (White & Stoecklin, 2008).

If children's natural attraction to nature is not allowed to flourish during their early years, *biophobia*, an aversion to nature, can develop. Biophobia ranges from discomfort and fear in natural places to contempt for what is not human-made (White & Stoecklin, 2008). Living at greater distances and in places with less available green space seems to work against an automatic and potentially ingrained need for contact with nature (Schiebel et al., 2022).

In a study carried out by Broom (2017) there was a 87% correlation between having positive experiences playing in nature as a child and identifying themselves as loving nature as adults. These experiences must be positive to be effective: the more positive the experience was perceived by youths, the more youth reported that they cared about nature (Broom, 2017). A relationship is understood as a positive connection through which individuals value nature and feel a sense of engagement, care, and responsibility for protecting it: we take care of the things we value and feel connected to (Noddings, 2012 in Broom, 2017). Hence, it has been corroborated that children's regular interaction and play in natural surroundings foster empathy and love for nature, as well as beneficial environmental behaviors and attitudes (White & Stoecklin, 2008).

Apart from that, nature is related to increasing autonomy, it may be a way for people to express their unique personal attributes without feeling constrained by external influences such as societal standards (Ridder, 2005). Individuals can reinforce their own intrinsic beliefs and values, gain perspective on the things that really matter, and feel inspired by the liberty and autonomy they experience in wild nature. This value encourages a desire to protect nature, both because of its independence from humanity and because of its ability to enrich meaning to human experience (Ridder, 2005).

On the other hand, it must be kept in mind that the autonomy mentioned may be limited by a sense of limited agency due to factors such as the high cost of organic food (Broom, 2017). Therefore, nature experiences may not be sufficient unless they are both regarded as positive by children and include focus to developing youth's self-efficacy and knowledge of behaviors that encourage environmental stewardship (Broom, 2017).

While the background of adults' pro-environmental behavior has already been mentioned, it is critical to understand children's reasons for behaving in a pro-environmental manner, as they are the ones who will have to cope with the environmental problems in the coming decades. According to Pearce et al. (2021), animals (vs. landscapes) generated higher empathic feelings, which had a favorable effect on children's behavioral intention since youngsters are more inclined to demonstrate empathetic concern for animals than for plants.

It's crucial to understand that children in situations that make them feel uncomfortable tend to avoid the message as a coping mechanism, which has a negative effect on their pro-environmental behavioral intentions. Furthermore, an external attribution of responsibility (environmental protection as the responsibility of an external agent, such as adults or the government) increases the likelihood of children avoiding the message (Pearce et al., 2021). As a result, an internal attribution of responsibility should be formed, i.e., encouraging them to understand that they have a role to play in the circumstance and can both harm and improve by their actions.

Although nature has positive effects on us, it is important to consider not only how we feel, but also to have information and knowledge, since humans have several cognitive biases that influence their actions. Two that can affect pro-environmental behaviors are *The Availability Effect* and *Better-than-average* bias.

*The Availability Effect* is defined by the tendency to react more rapidly and to a greater degree when considering information familiar to the individual when making decisions about the future (Richie & Josephson, 2018). The availability heuristic plays an important role in structuring the belief system. Therefore, low levels of knowledge may explain low levels of concern. Individuals who are well-informed on climate change and its causes can recall them, comprehend the risks involved with the issue, and are thus more inclined to support environmentally friendly measures (Kiran, 2021). People who lack climate-specific knowledge, on the other hand, are unable to recollect any reasons or examples for the climate crisis, making them more likely to feel safe and, as a result, to conclude that the crisis is insignificant (Kiran, 2021). Consequently, the easier it is to recall facts

about the problem and personal examples of past environmental attitudes, the more pro-environmental the consumer's self-perception will be (Cornelissen et al., 2008).

Regarding the *Better-than-average bias*, this effect describes the tendency of people to think of themselves as exceptional, especially when compared to their peers, due to the generous self-assessments of their ability and capacity they make in specific situations. Leviston & Uren (2020) found in their research that more than half of the participants were self-excluded and overstated their commitment to pro-environmental actions as compared to others. Self-evaluation was associated with a lower perception of personal suffering from climate change, higher ratings of coping ability, less guilt, and a lower moral and ethical obligation to take climate-change-prevention action. This occurs because it is possible that individuals whose inaction in specific behavioral areas is more salient may be motivated to make negative social comparisons ("I may not be perfect, but I am better than most") in an attempt to restore moral value (Leviston & Uren, 2020). To that effect, reminding people of their positive pro-environmental behavior has been found to promote a feeling of environmental identity, which may translate into a higher imperative to continue their acts (Leviston & Uren, 2020).

Biases allow the brain to behave more agilely, however, they can also cause us to act incorrectly or have a subjective vision about things, which is why it is essential to know and be aware of them.

Closing sentence needed: so direct knowledge, and realistic assessment needed to regulate behaviours.

#### **1.4. Environmental education**

Exposure to nature helps, but when there is a lack of environmental education there is no conscious analysis of the emotions that these experiences generate nor a real awareness of the need to care for nature.

The need for Environmental Education, which could be defined as a great resource for the optimal benefit of the relationship between human beings and their environment, through knowledge, awareness, promotion of healthy lifestyles, and pro-environmental behaviors (Musitu-Ferrer et al., 2020), is becoming more and more evident. Environmental Education is the most effective way to create awareness in the world's population with the sole objective of preserving the environment and generating a better quality of life for our current and future generations.

More and more countries are implementing human-nature relations as a distinct objective in the early childhood education curriculum, and other elements of these curricula are directly enriched by the inclusion of the connection to nature as a distinct objective (Barrable, 2019). However, not all education systems and curricular frameworks have necessarily responded to this call. Therefore, it has not yet been given the importance it deserves, knowing that nature connectedness is a useful and worthwhile goal for all education (Barrable, 2019).

Environmental Education has as its common axis the development of critical thinking in students and addresses the following aspects: Student empowerment, environmental education as a factor of change, and teaching environmental education in direct relation to nature (Villanueva et al., 2020).

Student empowerment reinforces environmental awareness based on knowledge obtained through information that reflects the global situation with respect to the environment. This ensures the creation of a closer bond and the adoption of an *ecocentric* view (nature-centered point of view). In a research conducted by Smith (2019), some students thought that human need (or greed) prevented ecocentrism from becoming a reality because humans use a disproportionate amount of natural resources. However, thanks to the knowledge gained, some students were moving from an anthropocentric past to an ecocentric future as they understood and supported the ecocentric view that the earth should be the center of environmental concerns. Thus, their priority shifted from satisfying human needs (anthropocentrism) to having an affinity with the needs of the earth (ecocentrism) (Smith, 2019).

The second aspect is Environmental Education as a factor of change, since trying to change a behavior that is deeply rooted in the culture, to the point of characterizing it, takes time. Even more, if that culture is based solely on the human being. However, this circumstance should lead us to continue working towards this cultural change that will allow the progressive adoption of a sustainable development model; and, to this end, experts agree that education is an essential tool (Casas & Puig i Bager, 2017).

Teaching Environmental Education in direct relation to nature requires the use of a methodology contextualized to the place where we work with and for nature, so it prioritizes the approach to free spaces where the student feels part of the environment and learns playfully and experientially (Otto & Pensini, 2017). In addition, it provides an intrinsic motivation to behave ecologically, thus offering a strong empathic relationship with nature, a lasting approach to ecological behavior, and a higher moral level (Otto & Pensini, 2017). Therefore, nature-based environmental

education is an effective pedagogical strategy, especially when it includes an understanding of the ecological impact of human action. In this way, nature develops new meanings for individual students (Otto, & Pensini, 2017). acti

Environmental Education can be implemented both formally and informally. As it is focused on early childhood education, it is important to approach globalized, meaningful activities that awaken children's interest and curiosity. Regarding the learning standards in this area, they enable a good relationship between the individual and his conscience, being an active and responsible part of life on the planet. They allow students to receive training to prepare and lead a responsible, supportive, autonomous, and coherent life, acquiring scientific thinking, starting from the knowledge of the world around them, and creating an attitude of criticism and reflection on possible solutions to situations in the context in which they find themselves (Pineda & Pinto, 2018).

Some didactic strategies within the school based on Environmental Education are:

The implementation of green spaces in the school and having plants in the classroom is a way to bring nature closer to the school environment and, therefore, promote respect for nature. In addition, it brings many of the benefits mentioned in the first point, the effects of experiences in nature, such as conceiving the establishment as a more pleasant space, increasing the degree of satisfaction and motivation of students, and helping to improve the quality of life of the educational space, facilitating the teaching-learning process (Gareca & Villarpando, 2017). It also promotes health, creativity, problem-solving, tranquility, joy, and energy (Gareca & Villarpando, 2017).

The use of natural materials (stones, sticks, leaves, water, seeds, sand, etc.) is another of them. In nature we can find materials with which to explore, learn and play, developing imagination and learning more about them and their importance in the natural environment. In addition, they can be found anywhere, without economic cost, and are biodegradable elements that therefore have the advantage of not polluting and reducing consumption (Lukin, 2014).

The schoolyard provides many opportunities to work on environmental education without having to go to a forest outside the city. In this way, it is possible to promote the learning of biodiversity in their immediate environment in schools (Duque, 2015) and to carry out environmental ornamentation (Pineda & Pinto, 2018).

The school garden is an ecological educational alternative par excellence because the child learns to grow healthily the food required for their diet, researching and understanding the importance of transforming the current agricultural model (Silva, 2017). In addition, if a composting

area is implemented in the garden, the behavior and nutrition of the students can be positively modified towards a healthier and more environmentally sustainable one (Pinillas & Torralba, 2021).

The field notebook can be a very useful strategy to record the naturalistic observations and the results of the experiments carried out, increasing the motivation in the learning process and facilitating the reflection and recording of the scientific procedure. In this way, the drawing capacity is used to develop the students' mental representations and to reinforce the observed scientific knowledge (Pinillas & Torralba, 2021).

Stories and videos at the early childhood education stage can be very helpful in promoting awareness and proposing solutions since realistic images facilitate the establishment of conceptual relationships. In addition, they have a great potential of attraction and contextualize the environmental problems shown, giving verisimilitude and sense to the situation described (González & Pérez, 2021). It is worth mentioning that for Environmental Education to be effective, once we have made these conceptual relationships, awareness must go hand in hand with experiential or real experiences in action environments, otherwise, it could be limited to "environmental goodism", which refers to the knowledge of the problem but without applying it in decision making (Pérez-Martín et al., 2019).

Finally, one of the best ways to work on Environmental Education is through projects since project-based learning positively influences attitudes and is based on active learning (Genc, 2015). Some of the projects that could be carried out are recycling, water, animals, plants, the school garden, insects, etc.

On the other hand, the number of outdoor Early Childhood Education centers have increased in the last decade, we are referring to out-of-school didactic strategies based on environmental education, which are outdoor learning spaces called forest schools. As for the operation of these schools, the sessions are led by a qualified professional from the forestry school, trained in aspects of child development, skills such as fire lighting, basic wood carving, and tool use, and knowledge of the local environment (Harris, 2018). It also focuses on building children's confidence and self-esteem through small, repeatable tasks and encouraging their personal, social and emotional development through the development of social and teamwork skills (Harris, 2018). Forest school usually takes place in a local forest, although in some cases it takes place in an area of the school grounds separate from the normal playground (Harris, 2018).

Guided activities are very useful to encourage the child to consciously explore. However, time must also be spent playing. Due to issues such as time pressure for children and parents, screen



time, more time spent in institutions, increasing traffic, and parental concerns for safety, self-initiated play in surrounding nature has grown more difficult to achieve in modern society. Nature offers limitless opportunities for play and activities, and each child appears to have a unique way of exploring it, based on their background, experiences, and personalities. The dialogue between the child and the space, whether indoors or outdoors, takes place in an interpretative, creative, and dynamic process in which meanings are created. It is necessary and beneficial to put aside the fear of children becoming bored and stop structuring children's nature experiences as target-oriented and predetermined, spending time in nature could be an alternative to a stressful and organized everyday life. (Skar et al., 2016).

Environmental Education is not only something that happens in the classroom. Parents play an essential part in this education since it must be globalized and applied to all aspects of life. The majority of parents are aware of the benefits of exposing their children to nature; nonetheless, they are hesitant to allow their children to play independently in nature, primarily owing to fears of incidents in natural environments (Van et al., 2022). It is essential to inform parents about how much safer today's society is than in the past by providing information on social environment safety. Furthermore, children's growth requires early recognition of risks and learning to overcome them. Because parks are where most parents allow their children to play alone, boosting the quality of natural components in parks would increase children's interactions with nature while also providing safe conditions (Van et al., 2022).

Overall, environmental education promotes the development of educational projects that foster the creation of complex thinking, the formation of values and skills that generate an implicit commitment, and collaborative work in order to train the citizens that society needs, that is, people who take action and commit themselves to give the necessary relevance to the environment to preserve life on the planet (Villanueva et al., 2020). The school not only can but must trigger an attitudinal change in the subjects to favor their moral growth; only in this way will it be possible to change society. A society that currently tends to transmit to its children the same scales of values and behaviors that have led to the current environmental deterioration (Marcén & Benegas, 1995).

## **2. RESEARCH QUESTION**

Environmental identity research holds promise for a better understanding of why people behave in certain ways when it comes to the environment. This study seeks to contribute to answer the question of what impact does exposure to nature have on pro-environmental behaviors in children?

## **3. METHOD**

It will be in the educational field, where we will pursue a series of experiences that will allow us to take a step further in the development of an environmental awareness that grants the preservation of our environment.

The main methodological principles of this proposal are intended to allow students to enjoy nature-related experiences and acquire meaningful learning through the manipulation of natural materials, free and spontaneous play, movement, and curiosity. That is, resources that promote the student to be involved in the whole process participating actively and cooperatively. Observation and experimentation, as well as the participation of families, are also highlighted as fundamental elements.

A rich variety of experiential and sensory experiences will be encouraged. There will be both activities inside the classroom, related to nature, and activities outside the classroom. For the last ones, time will be allowed for free and spontaneous activity, as the benefit comes more from being in the natural environment than from the activity itself. Regarding the didactic strategies mentioned in the *Environmental Education* section, I have used natural materials, stories, videos, plants in class, and outings to natural areas (parks).

My role and that of the teacher is to guide, that is, to accompany the child indirectly, letting them be the protagonists. The adult only intervenes to carry out the assemblies and, if necessary, to help the students in specific moments, as well as in the respective explanations for the elaboration of the activities.

### **3.1. Contextualization**

The proposal will be carried out in the second year of the second cycle of early childhood education, in the context of the school placement. It is a group of 17 children where the age range is 4 and 5 years old.

As for the situation prior to the proposal, it is worth mentioning that the 17 students live in an urban area and 8 of them know the park where the two outings will take place (Parque de los aromas) (Figure 1). In spite of this, none of them have made a conscious exploration, and the time spent there has been based on symbolic play. Therefore, all the activities will be based on having conscious nature experiences (Table 1).

Figure 1. Park location on the map.



Table 1. Description and objectives of the proposal.

PHASE	DATE	DESCRIPTION	OBJECTIVES
Research 1	14/03/2022	Answer the question: What will we see in the park?	Find out their previous knowledge.
Outing 1	15/03/2022	<p>“Parque de los aromas”</p> <ul style="list-style-type: none"> <li>❖ Explore using the senses: Touch, smell and observe natural elements. Listen to the sounds of the environment.</li> <li>❖ Dialogic reflection.</li> <li>❖ Collecting materials for the nature corner.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Have a pleasant experience in nature.</li> <li>❖ Explore consciously and autonomously.</li> <li>❖ Develop respect for natural elements.</li> <li>❖ Reduce the deficit of contact with nature.</li> </ul>

*(continues in the next page)*

Developing environmental preservation through experiences in nature in early childhood education

Research 2: Reflection	15/03/2022	<p>Reflect on the experience by talking and drawing.</p> <ul style="list-style-type: none"> <li>❖ What have we done?</li> <li>❖ What did we like the most?</li> <li>❖ How have we felt?</li> </ul>	<ul style="list-style-type: none"> <li>❖ Be aware of their feelings about the experience.</li> <li>❖ Identify and represent through a drawing what they liked the most.</li> </ul>
Nature corner	17/03/2022	<ul style="list-style-type: none"> <li>❖ Sensory exploration.</li> <li>❖ Works of art.</li> <li>❖ Plant care.</li> <li>❖ Contemplation of books related to nature.</li> <li>❖ Mathematical activities with natural elements.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Develop observation, manipulation and experimentation of natural materials.</li> <li>❖ Taking responsibility for various tasks: plant care.</li> <li>❖ Know, appreciate, take care and respect the material.</li> </ul>
Curious garden book	22/03/2022	<p>Read the story to the students in the assembly and reflect on it.</p>	<ul style="list-style-type: none"> <li>❖ Identify what feelings emerge from the contrast between a city with and without plants.</li> <li>❖ Analyze the process of plant care.</li> <li>❖ Analyze the process of maintaining green spaces in a city.</li> </ul>
Planting lentils	28/03/2022	<p>Plant eight lentils in a glass jar wrapped in wet cotton wool. Leave them in the nature corner to take care of them and observe their growth.</p>	<ul style="list-style-type: none"> <li>❖ Develop the responsibility, desire and motivation to take care of the plants.</li> <li>❖ Identify the plants' needs.</li> <li>❖ Observe the changes in the plants' growth.</li> </ul>

*(continues in the next page)*

Developing environmental preservation through experiences in nature in early childhood education

Short film about the environment	30/032022	Watch a short film (Laforet, 2019) and reflect on it.	<ul style="list-style-type: none"> <li>❖ Identify what feelings emerge from the contrast between an environment with and without pollution.</li> <li>❖ Reflect on ways to pollute less.</li> </ul>
Bird feeder	06/04/2022	Create two bird feeders with milk cartons, sticks and birdseed.	<ul style="list-style-type: none"> <li>❖ Develop the responsibility, desire and motivation to take care of the animals.</li> </ul>
Outing 2	26/04/2022	<p>“Parque de los aromas”</p> <ul style="list-style-type: none"> <li>❖ Create things with natural elements.</li> <li>❖ Outline the border of the students’ shadows with chalk.</li> <li>❖ Painting on paper by placing it on different surfaces.</li> <li>❖ Drink water from a fountain, water plants, clean with water the figures made with chalk.</li> <li>❖ Dialogic reflection.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Have a pleasant experience in nature.</li> <li>❖ Reduce the deficit of contact with nature.</li> <li>❖ To have sensory experiences by manipulating natural elements.</li> <li>❖ Discover the shadows and understand how they emerge.</li> <li>❖ Analyze and raise awareness of water use.</li> </ul>
Research 3: Reflection, completion of the project.	27/04/2022	<p>Reflect on the experience by talking and drawing.</p> <ul style="list-style-type: none"> <li>❖ What have we done?</li> <li>❖ What did we like the most?</li> <li>❖ How have we felt?</li> </ul>	<ul style="list-style-type: none"> <li>❖ Be aware of the evolution in their perceptions and feelings towards nature after the intervention.</li> <li>❖ Identify and represent through talking and drawing what they liked the most.</li> </ul>

---

### **3.2. Research**

The research is based on a qualitative design; specifically, a phenomenological study since it seeks to know what is the meaning and essence of an experience lived by a group. The experiences of the participants are the focus of inquiry and there are different ways of interpreting the same experience, where the meaning of the experience for each participant is what constitutes reality (Hernández et al., 2006). For this purpose, the researcher conducted running-record observations of the children's activities during their time both outdoors and in the classroom carrying out nature-related activities on ten different days over a ten-week period. The record was effectuated by collecting childrens' drawings, and recording and transcribing literal expressions to illustrate main themes.

Once the recordings are obtained, they will be listened to and analyzed to obtain the results. Special attention will be paid to two attitudes, these are utilitarianism and protectionism. Utilitarianism refers to the fact that the elements around us are for the benefit and use of humans. However, protectionism refers to the protection of nature itself without taking into account what it brings to human beings.

As the research has been carried out in a school with the D model (i.e. Basque as vehicular language in all the subjects, excluding foreign language), the proposal was conducted in basque and translated into English by the researcher.

### **3.3. Sequence of activities**

#### **1. Previous knowledge**

In order not to introduce the topic in a class all of a sudden without any kind of context and to make it more spontaneous for the students, the proposal starts with an outing to "Parque de los Aromas" in Nueva Artica. To find out the children's previous knowledge and awareness about the park, a question is presented to the students: "What do you think we will see in the park?"

#### **2. First outing**

The first outing takes place in "Parque de los Aromas" in Nueva Artica where the objective is to explore. The first step is to repeat the question from the "previous knowledge" section to check if the students are more aware of their surroundings once they are at the park. The question this time is: "What can we see at the park?"

Then, is the time to eat the snack sitting on the grass while they are made to think by introducing them to the two dialogic reflections:

- Dialogic reflection 1:

Make the students think about the materials that can be used to wrap their snack and where to throw the garbage they generate to develop an awareness that the trash we dispose of hurts the environment. For this, two questions are presented: What did you bring to wrap your snacks? Where are we going to throw the trash?

- Dialogic reflection 2:

This reflection is based on the importance of nature. After students have identified and become aware of more natural elements than they did in the previous session, they are asked to reflect on the significance of those elements and nature in the world. The question is: "Why do you think there are trees in the world?"

Before starting the exploration, it is explained how it should be done. It is a free exploration but without damaging the environment, therefore, it must be explained that they can smell, touch, and observe everything they want as long as what they pick up is already fallen; they can not pull up alive elements such as flowers.

The experience is divided into two parts. The first part is more active and dynamic, requiring a lot more movement and engaging the senses of sight, smell, and touch. They can first observe, touch and smell whatever they want in the park, such as grass, flowers, sticks, leaves, hug trees, and so on. It is a conscious exploration so they are asked questions such as "what does it feel like to touch that?", "what does it smell like?", "what does it look like?". As they explore, they will collect the natural elements they find and want to create a nature corner in the classroom. Finally, they will run through the grass being aware of what they are feeling and they will be asked: "What did you feel?", "is running on grass the same as running on the ground?".

As for the second part of the experience, we work on the sense of hearing and the analysis of emotions, leaving movement aside and leading to relaxation. They take a sit on the grass, close their eyes and pay close attention to listening. They will breathe in and out, identifying whether they are feeling relaxed or nervous. Finally, they lay down on the grass and identify shapes in the clouds.

### 3. Nature corner

The next proposal to be carried out is the creation of the nature corner. The corner will be created in free space in the classroom with a table. It will be decorated on the one hand, with the materials collected by the children during the outing. And on the other hand, with both the materials that they will bring during the proposal weeks and some of the activities that will be carried out during the project, as seen later in the lentil planting. These materials could include: leaves, pine cones, stones, flowers, information about nature, activities and games, stories, etc.

#### 4. Story reading: Curious garden book

In the following activity, the children will be introduced to the story "Curious Garden" which talks about a city without plants that is very dark and sad. A child discovers a flower and other plants that are about to die and then begins to care for them. As a result, they begin to grow and expand, and the entire city becomes green, full of plants and flowers due to the effort. The reading will begin in the assembly when all the children are seated together.

Following the reading, participants are encouraged to reflect on whether they prefer a city with or without plants, how to maintain a green city, and pollution treatments. They will be guided by questions: How do you like the city best? What do you feel when you see the city without plants and gray? What can we do to maintain a green city?

#### 5. Lentil planting in the classroom

The objective of this activity is to work on plant care. It requires the participation of the families since each child must bring a glass jar from home. With a permanent marker, each student's name will be written on their respective jar and the students are divided into three groups, in this case, two groups of six children and one group of five. With their jars, each team of pupils will sit around a table. They will wrap eight lentils in a piece of cotton wool, place the cotton wool inside the jar, and moisten it with water from a glass bottle. Finally, they will leave it in the nature corner to analyze what happens with them and observe the growth process of the plants.

Once finished, they will all sit together on the floor to make a hypothesis about what will happen to the lentils. The following question will be presented to them to elicit discussion and reflection: What do you think will happen to the lentils?



Plant care will be integrated into the driver's<sup>1</sup> job and it is required to care for the plants and provide them with what they need on a daily basis (water them, move them to a place with more light, etc.).

#### 6. Short film about different natural environments

The objective of this activity is to show different natural surroundings, contrasting polluted and unpolluted, to observe how each one makes the students feel and if it has an impact on them.

This is accomplished by the use of the short film (Laforet, 2019). In the beginning, there are videos of unpolluted landscapes and animals, which are also impressive for their beauty and convey tranquility and well-being. Suddenly, it takes a turn as images of garbage-filled seas, plastic-wrapped animals, smoke-filled factories, and polluted landscapes appear.

After watching the video, they will have time to express their reactions and emotions. They will be led by questions like: How did you feel watching the videos without the garbage? How are you feeling now? What will happen if we keep polluting at this level?

#### 7. Bird feeder

The objective of this activity is to raise awareness of animal care and it is based on the entire group constructing two bird feeders. The materials to be used are two milk cartons, two sticks, birdseed, and paint. The students will form two groups and they will sit around a table with one of the milk cartons on each table.

They will start by cutting a large hole in the center of the milk cartons. Then, they will decide on a color and use it to paint the box. While the paint dries, they will speculate about what will happen. To encourage reflection, students will be asked, "What do you think will happen when we hang out the bird feeders?"

Once the paint has dried, a little hole will be drilled beneath the larger one, into which a stick will be placed for the birds to rest. Finally, the birdseed will be poured into the large hole, and the feeders will be strung from a rope in the playground, visible from the classroom window.

---

<sup>1</sup> Each day the driver is a different student and is responsible for some tasks: counting how many children have been to class, identifying the weather, crossing off the corresponding day on the calendar, writing their name on the blackboard, and taking the compost bucket to the garden to make compost. In addition to the responsibilities, it has privileges such as being the first to choose the corners.

## 8. Second and last outing

The outing takes place once again in “Parque de los Aromas” in Nueva Artica, but this time the focus is on creation rather than exploration.

The first activity consists of making mandalas, nests, constructions, bonfires, and other items they can think of on the ground using natural elements such as sticks, leaves, etc. Through the manipulation of natural components discovered by the children themselves, creativity is developed and stimulating learning is encouraged.

In the second proposal, they must create drawings with various textures using paper. They will achieve a drawing with diverse textures by laying white sheets on different surfaces such as trees, floors, and grass and then painting over them.

In order to work on sunlight and shadows, they will use chalk to define the shadows of their peers. Each child will stand up and construct a shape with his body, while the others will use chalk to outline the shape of his shadow.

Finally, water will be explored to raise awareness of this natural resource and how it is used. They will go to the fountain in the park and the students will drink water, refill their bottles, water the plants around them, clean up the chalk and observe how the water on the ground evaporates and dries up.

## 4. RESULTS

To assess if this study has answered the research question, the results relating to the children's experiences will be provided first, followed by the attitudinal and conceptual changes.

The following example occurred when children explored the grass.

Child A: It is green

Child B: It is prickly

Child C: It is soft

Child D: This flower has small hairs

Child C: This one tickles my finger (giggling)

Researcher: Is it nice to touch flowers and grass?

Children: Yes!

Child E: Look at this (points to a crystal)

Researcher: What is it?

Child E: It is a crystal

Researcher: Should a crystal be here?

Children: No

Researcher: What should we do with it?

Child B: Throw it in the trash

Researcher: Do you like to find trash in the park?

Children: No!

Child A: It spoils the park

While four of the children subjectively identified the qualities of grass by exploring it, all five expressed favorable emotions toward contact with grass and flowers. At the same time, all five expressed rejection and disgust toward finding garbage on the grass and in the park in general.

The following interaction occurred smelling flowers.

Child A: Smells like pollen

Researcher: What is pollen?

Child A: What the bees pick up.

Researcher: What for?

Child A: To make honey

Researcher: And do you know what else?

Child A: No...

Researcher: To eat. Bees need to eat pollen to live.

This child demonstrated to have a utilitarian perspective due to the thought that bees collect pollen only to create honey for humans. Apart from this student, most of them went straight to plucking and smelling the flowers so we took them to class to see what would happen to them, and this is what they said when they saw the results:

Child A: It has died (Sad intonation)

Child B: It did not have water

Child C: With heat they die

Child D: Poor thing!

Two of the students evaluated death causes and identified plant needs. When they saw the wilting plants, all four expressed empathy and guilt.

Two students demonstrated positive emotions while running on the grass:

Researcher: What did you feel?

Child A: quickly

Researcher: Quickness?

Child A: Yes

Child B: Air

Researcher: Did you like to feel the air?

Child B: Yes!

Child A: Running on grass is super cool!

Throughout the second part of the outing, the seventeen students expressed that they felt happy and peaceful while lying on the grass. Three of the five children who responded to the question indicated natural elements (animals), while the other two mentioned artificial elements (transport):

Researcher: How are you feeling?

Children: Good!

Teacher: Do you feel nervous or relaxed while you're lying on the grass?

Children: Calm

Researcher Close your eyes. What can you hear?

Child A: Train

Child B: Birds

Child C: Me too

Child D: Dog

Child E: Cars

At the end of the proposal, four children discussed their experiences and demonstrated that they had a very positive and enjoyable time:

Child A: I would stay here every day

Child B: Me too!

Child C: And me!

Child D: I would come almost every Friday

Child A: I would come every day

After they returned from the park, they were given the option to draw a picture about the expedition. Ten children participated in the drawings and nine of them (90%) showed positive results, while one of them (10%) showed a negative attitude towards natural elements without guilt.

An illustration representing a positive experience (Figure 2):

Figure 2. Child A's drawing.



Child A: This is the teacher lying on the grass.

Researcher: How is she feeling?

Child A: Happy.

Researcher: Why did you paint that?

Child A: I liked it.

Researcher: Did you enjoy that moment?

Child A: Yes, I have been very happy

An illustration of a drawing representing a indifferent experience (Figure 3):

Figure 3. Child B's drawing.



Researcher: What is that brown thing you have painted?

Child B: The mud.

Researcher: And the blue thing?

Child B: The crystal that was on the floor.

Researcher: Why did you draw that?

Child B: Because I want to

Researcher: Did you like finding that?

Child B: Yes

Researcher: What is that?

Child B: A volcano

Researcher: And the red thing?

Child B: The volcano is going to burn everything and that's the fish and the flowers are dying.

Researcher: Does that make you sad?

Child B: No.

See Annex 1 for the rest of the drawings.

Through the story of "Curious Garden," they also experienced emotions and without asking them any questions, among themselves, the conversations about it arose.

Child A: I don't like it like that, do you? (pointing to the dark city with no plants).

Child B: No! How well the boy did, he made everything green and beautiful!

The results of the reactions to the short film showed great impact on the children:

Child A: How ugly!

Child B: Alaaaaa poor animals!

Child C: I saw a man throwing a can on the beach one day.

Child D: Jo, this is how animals die.

Child E: When I go to the street, I see garbage on the ground.

Researcher: And do you like it?

Children: Nooooo!

Researcher: What will happen if we continue like this?

Child B: Animals will die

Child F: We won't be able to eat fish!

Two of them shared personal stories about encountering rubbish, and three of them expressed surprise and sadness. Only one of the kids had a utilitarian attitude (Child F). On the other hand, they were more impacted in instances involving animals than in those involving plants, for example, when a factory emerged smoking in one of the videos, one of them said, "How beautiful!"

Finally, the following example occurred in the second outing which was the last proposal of the project:

Teacher: What do we need water for?

Child A: To drink

Child B: To take a shower

Child C: To clean the dishes

Child D: Swimming pool

Child E: To extinguish the fire

Researcher: Apart from us, what else on the planet needs water?

Child B: Plants.

Child A: Animals.

Four children showed utilitarian attitudes (Child A, B, C and D). After the second question two children took nature into account.

After this outing they were also offered the option to draw a picture about the experience and only three of the seventeen children chose to do so. The drawings of the three children show positive experiences:

Figure 11. Child A's drawing.



Child A: This is my family and me camping.

Researcher: And why did you draw this?

Child A: Because I like picnics.

Researcher: And did today's outing remind you of a camping trip?

Child A: Yes!

Figure 12. Child B's drawing.



Child B: Flowers, little bugs, ladybug flying, the sun, the grass and the sky.

Researcher: Why did you draw this?

Child B: Because I like it.

Researcher: Did you enjoy the outing?

Child B: Yes, a lot!

Figure 13. Child C's drawing.



Child C: The snow, the rain, the clouds, the flowers, the grass, ladybugs.

Researcher: Why did you paint this?

Child C: Because I liked it!

Researcher: Did you like the experience?

Child C: Yesss!

In terms of changes in attitudes and knowledge, from the beginning the children showed a change in their awareness of the elements around them.



This example occurred in the first project proposal when answering the question "What will we see in the park?" to observe their previous knowledge.

Child A: A tower

Child B: A house

Child C: The train

Child D: A lot of grass

Child E: Stairs

Child F: A path

Out of 17 children six responded, five of them mentioned human-made elements and only one of them mentioned a natural element. And these were the answers to the same question once we were in the park:

"What can we see at the park?"

Child A: Grass

Child B: and flowers

Child C: piruli (tower)

Child D: and to hide (pointing to the inside of the pines)

Child E: people

Child F: tree

Child G: bench

Teacher: How are the trees?

Child F: Without leaves

Teacher: And what will happen in the spring?

Child G: Flowers

Child H: And leaves

This time, eight children have responded and six have said items related to nature and only two (banco and piruli) have said human-made items. Furthermore, they clearly understand the seasons, their cycles, and features (leaves and flowers will appear).

These were the answers to the questions "what did you bring to wrap your snacks?" and "Where are we going to throw the trash?":

Teacher: What did you bring to wrap your snacks?

Child A: I wrap it in a taper

Child B: I brought it in this paper. (Aluminium foil)

Teacher: Where are we going to throw the trash?

Child A: In the trash.

Teacher: Will Child A throw the taper in the trash?

Children: No

Teacher: And will Child B throw the paper in the trash?

Children: Yes

Teacher: And then what happens with so many papers?

Child C: Dumpsters fill up.

Child D: They hurt the planet.

Child E: And fishes.

They were all aware that there are objects that are not discarded and are recycled. Furthermore, two of them demonstrated environmental and fish protectionist attitudes.

The following interaction was a result of the answers to the question of “Why do you think there are trees in the world?”:

Child A: for the birds to perch on

Researcher: Okay, the trees are the birdhouses. What else?

Child B: Is nature

Teacher: What do we need nature for?

Child C: So we don't die.

Teacher: Why? What do trees give us?

Child D: Life

Child C: Strength

Teacher: Oxygen

Child C: What is that?

Researcher: Breathe in

(Breathe in and out twice)

Researcher: The air we have taken in contains oxygen

Teacher: And we need oxygen to live, otherwise, we would die. If oxygen does not enter our lungs, we die. That's why we need plants.

Child E: That is why there are a thousand in the mountain.

Teacher: Yes, and then the trees have to be cut down?

Children: No!

Teacher: If we cut the trees, what happens?

Child C: That we die.

Researcher: If we cut them down, they do not give oxygen either to us or the animals. Besides, they are the homes and food of many animals.

Child F: Giraffes eat leaves

Teacher: That's right, so if we cut the trees we die, and the animals?

Child G: Animals too.

Teacher: Do we want that?

Children: No!

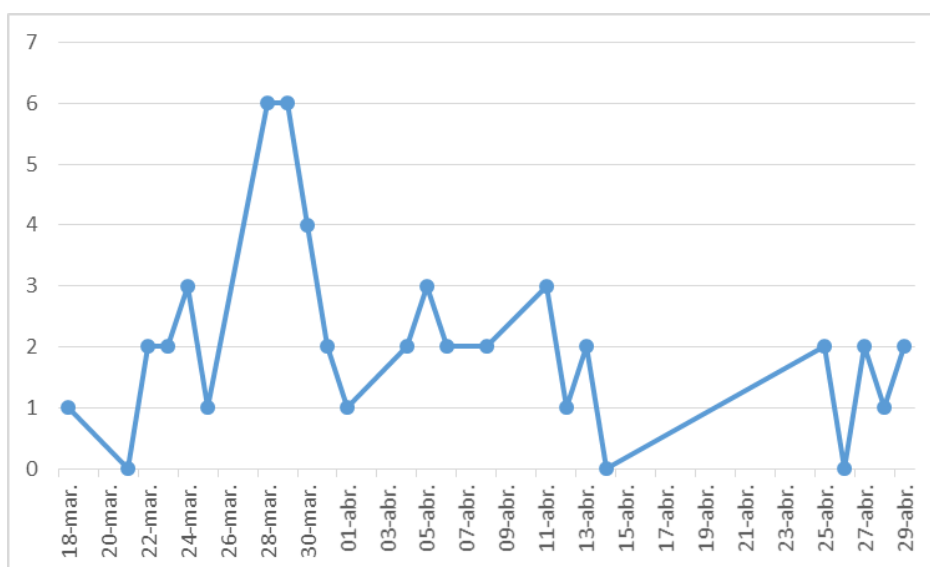
Teacher: Then we have to take care of nature

These results show several utilitarian attitudes and they have learned a new term, oxygen.

Regarding the nature corner, they have shown a change and an increase in their pro-environmental attitudes because they contributed a lot of materials for decoration and always emphasized "I didn't pull it out, it was already down". The corner looks like this (Anexxe 2).

In addition, a record was made to see if the children spent time in the nature corner (Graph 1).

Graph 1. Record of the number of children in the nature corner everyday.



It can be observed that every day there were children who spent time in the nature corner. There was a considerable increase in attendance after reading the story or planting the lentils, but overall, there was not a day when there were 0 children, every day some of the students went to the corner.

The next conversation is the reflection that was produced by the questions they were asked after reading the story, these are, how do you like the city best? What do you feel when you see the city without plants and gray? What can we do to maintain a green city?

Child A: I like it better with plants, so I can walk barefoot on the grass.

Child B: like to go to the woods

Miren: And what do we have to do to maintain and care for the plants?

Child A: Water them

Child C: Sing to them

Child D: Sun

Child E: No littering

Teacher: What else do we pollute with in addition to garbage?

Child F: With cars

Teacher: And what can we do to avoid using the car?

Child E: There are some with a charger

Child A: Walking

Child G: By bike

All children agreed that they would prefer a city with plants to a city without plants. They also showed knowledge about plant and environmental care, one of the answers being imaginative (Child C). On the other hand, they showed knowledge about non-polluting means of transportation.

That conversation was not the only one in which they expressed ways to care for the plants. When they planted the lentils and they started to grow, they were asked what they had done to achieve this:

Child A: They're out!

Child B: Mine are hidden.

Teacher: How did we get them to come out?

Child C: With water

Miren: If we don't water them and they don't have light, what happens?

Children: They die

Teacher: And if we pour a lot of water?

Child D: They also die.

Finally, they demonstrated a lot of speculation and prediction capacity when they created the bird feeders. These are the hypotheses they made:

Child A: Maybe 100 birds will come

Child B: what if they enter the classroom?

Child C: what if they don't like the food?

Child D: Maybe it's like a scarecrow

Child E: Maybe this way they rest from flying.

## 5. DISCUSSION

Analyzing the results, it can be seen that there were many changes in the children's attitudes because of what they learned and how the experiences made them feel.

In the first outing, in the exploration, they were able to identify elements that should not be in the park (garbage) and also expressed feelings of displeasure. As for caring for natural elements, from the beginning it was made clear to them that they could not pull up anything alive and it had a lot of impact on them. From that moment on, they reminded each other "don't pull up flowers because they die" and they were more conscious about "killing" or "hurting" nature: "you are hurting the tree by hitting it with the stick". They maintained this behavior throughout the ten weeks and developed a much more caring behavior towards the environment. Some examples of comments were: "be careful not to step on it", "let's put the ladybug with the ant so they become friends", "I saw a ladybug in the grass but I left it free because otherwise, it would die".

Continuing with the first experience, they were very motivated. When they were told that they had to collect natural elements for the nature corner, one of the girls said "How cool the nature corner! And together they filled a bag full of sticks, leaves, stones, etc. in a short time. On the other hand, that motivation turned into relaxation when they opened their eyes after lying, listening, and breathing in the grass. They were very calm and content and did not want to go back to class.

As for the drawings after the outing, the child who had an indifferent reaction about nature in his drawing was not the result of a negative experience in nature because he was joyful and engaged in the exploration during the session. As the days progressed, this indifference disappeared and he was one of those who showed more empathy when watching the short film. Therefore, it should be taken into account that a single day is not enough to have the necessary effect on children to develop pro-environmental behaviors.

The findings of Pearce et al. (2021) were also confirmed, as the children were shown to feel a greater impact and to be more able to empathize with situations involving animals than those involving landscapes. For example, the child who said "how beautiful!" when they saw the smoke

released by a factory, this was because he thought the shape the smoke created in the sky was beautiful and was not aware of the damage it could do to the planet.

As for the second outing, the results obtained were very positive as the children were very involved and motivated. They created many things on the ground (Annexe 3) and the shadows were a real discovery (Annexe 4). On the other hand, the way of asking the question to reflect on the use of water was the one that influenced the responses of utilitarian attitudes that were obtained.

Concerning the drawing of pictures after the experiences in nature, hardly any children participated due to tiredness and lack of time. It is important to keep in mind that at this stage they need their time for free play.

Based on the knowledge results, the responses to the question of the previous knowledge section reinforced the need for this type of experience as only one child mentioned an element of nature, the others said human-made elements. The word "park" was associated more with elements related to the city than to nature.

In the discussion of why trees exist, there are certain cross-dependencies in nature (branches are for birds to perch on, and for the animals to eat), but everything is there for a purpose. Nature must be protected since it supplies us with services, according to this utilitarian viewpoint. However, the previously described method of asking the question is critical since they begin by saying "for the birds" and "it is nature," and it is only when they are asked why "we" need nature that utilitarian ideas emerge. As a result, we adults are often the ones who impregnate youngsters with this mindset without recognizing it.

On the other hand, they use an exotic animal as an example (giraffe). This implies that they know more about exotic nature than they do about local nature. Something similar happens with the example explained by Torres-Porras et al. (2016) about having greater knowledge about pokemon species than about wild animals. In this case, we can see that apart from knowing a few animals, most of the ones they know are exotic.

The families were really involved in the lentil planting because everyone brought a jar and some even brought a flowerpot. In addition, the kids went around the corner every day to look at the lentils, compare which had grown the most, and consider why "I suppose this one lacks light because it is in the corner." In addition, several of the kids planted lentils at home.

In relation also to the participation of the families, it was made clear who encourages an environmental education at home. For instance, the child who in the first outing said that the

garbage fills up if we throw a lot of papers is the same child who proposes cars with chargers to pollute less and keep the city green.

When it came to making the bird feeders they were very motivated and did a lot of speculation. However, the result was quite negative because we only had the possibility to see two birds, and the boxes lasted three days because of the rain.

In general, during the ten weeks, they showed a lot of interest, motivation, and involvement. Many of the children included natural elements in their drawings even though they had not been asked to do so (Annexe 5). Besides, at the playground they were also heard having conversations based on pro-environmental behaviors:

Child A: Look, there's a banana peel on the ground and it shouldn't be there

Child B: The earth will die and it's the planet we live on!

Finally, this proposal also had an effect on the classroom contents since they had to choose the project they were going to work on in class and all the topics they said were related to nature. The topics they proposed were: birds, ladybugs, flowers, butterflies, and bees. They all voted and ladybugs came out.

As the examples demonstrate, it is through direct contact with flowers, insects, and natural elements in general that the children were able to express to their peers expressions like: "don't hurt the tree", "don't pull up the flowers or they will die", "let the ladybug free so it doesn't die" and "there is a banana peel on the ground and it shouldn't be there, the earth will die and it is the planet we live on".

## 6. CONCLUSIONES

La finalidad de este proyecto no es simplemente dar a conocer a los niños el entorno natural, sino que se trata de ser conscientes de la importancia, beneficios y urgencia de una educación ambiental basada en experiencias en la naturaleza.

Las experiencias en la naturaleza brindan una oportunidad esencial para que los niños aprendan sobre el medio ambiente, mientras contribuyen a preparar adultos con mentalidad ecológica. Hay que tener en cuenta que los niños de hoy en día son los adultos de la sociedad del futuro.

Dada la curiosidad de los niños pequeños, su entusiasmo por los nuevos descubrimientos y su capacidad para experimentar el entorno natural en cualquier lugar, los docentes deben utilizar contextos de aprendizaje formales e informales para promover la educación ambiental. Además, debido a que los niños invierten muchas horas en el colegio, la escuela tiene un papel fundamental en su educación, dando la oportunidad al profesorado de aportar su granito de arena en esta sociedad, para que podamos seguir avanzando y desarrollar una sociedad más equitativa y proactiva a favor de las personas y la naturaleza.

## **7. FUTURE RESEARCH**

In the future, it could be interesting to follow up with these children to conduct longitudinal research to see if the results that have been collected in the study are maintained and continue with a pro-environmental attitude. This way, we will also gain more knowledge about this topic and we will be able to deepen what Broom (2017), Chawla (2007), and Thompson, Aspinall, & Montarzino (2007) explained about adults who are ecologically minded admitting to having had favorable experiences in nature as children. Therefore, analyzing the attitudinal progress of children who have experiences based on environmental education can provide a first-hand correlation.



## REFERENCES

- Barrable, A. (2019). The case for nature connectedness as a distinct goal of early childhood education. *International Journal of Early Childhood Environmental Education*, 6(2), 59-70.
- Broom, C. (2017). Exploring the relations between childhood experiences in nature and young adults' environmental attitudes and behaviours. *Australian Journal of Environmental Education*, 33(1), 34-47.
- Cabello, M.J. (2011). Ciencia en Educación Infantil: La importancia de un “rincón de observación y experimentación” ó “de los experimentos” en nuestras aulas. *Pedagogía Magna* (10), 58-63. <https://dialnet.unirioja.es/servlet/articulo?codigo=3628271>
- Cagle, N. L. (2018). Changes in experiences with nature through the lives of environmentally committed university faculty. *Environmental Education Research*, 24(6), 889–898. <https://doi.org/10.1080/13504622.2017.1342116>
- Calvo-Muñoz, C. (2014). Niños y Naturaleza, de la teoría a la práctica.
- Casas Jericó, M., & Puig i Bager, J. (2017). El impacto ambiental: un despertar ético valioso para la educación. *El impacto ambiental: un despertar ético valioso para la educación*, 101-128.
- Clayton, S. D., & Opatow, S. (2003). *Identity and the natural environment: The psychological significance of nature*.
- Chawla, L. (2007). Childhood Experiences Associated with Care for the Natural World : A Theoretical Framework for Empirical Results. *Children, Youth and Environments*, 17(4), 144–170.
- Clear, J. (2018). *Atomic habits: an easy & proven way to build good habits & break bad ones; tiny changes, remarkable results*. New York: Avery, an imprint of Penguin Random House.
- Cohen, S., & Horm-Wingerd, D. (1993). Children and the Environment: Ecological Awareness among Preschool Children. *Environment and Behavior*, 25(1), 103–120.
- Cornelissen, G., Pandelaere, M., Warlop, L., & Dewitte, S. (2008). Positive cueing: Promoting sustainable consumer behavior by cueing common environmental behaviors as environmental. *International Journal of Research in Marketing*, 25(1), 46-55.

Developing environmental preservation through experiences in nature in early childhood education

Dadvand, P., Nieuwenhuijsen, M. J., Esnaola, M., Forn, J., Basagaña, X.,...Sunyer, J. (2015). Green spaces and cognitive development in primary schoolchildren. *Proceedings of the National Academy of Sciences*, 112(26), 7937–7942. <https://doi.org/10.1073/pnas.1503402112>

Damasio, A. R. (1994). *Descartes' error: emotion, reason, and the human brain*. New York: G.P. Putnam.

Duque-Fontalba, L. (2015). *La biodiversidad del patio. Propuesta de intervención para Educación Infantil* (Bachelor's thesis).

GARECA, M., & VILLARPANDO, H. (2017). Impacto de las áreas verdes en el proceso de enseñanza aprendizaje. *Revista Ciencia, Tecnología e Innovación*, 14(15), 877-892.

Genc, M. (2015). The project-based learning approach in environmental education. *International Research in Geographical and Environmental Education*, 24(2), 105-117.

González, Á. M., & Pérez-Martín, J. M. (2021). La concienciación ambiental en el aula de infantil mediante el cine y los cuentos. *Revista de educación ambiental y sostenibilidad: REAYS*, 3(1), 1302-1302.

Gray, C., Gibbons, R., Larouche, R., Sandseter, E. B. H., Bienenstock, A., Brussoni, M., ... Tremblay, M. S. (2015). What is the relationship between outdoor time and physical activity, sedentary behaviour, and physical fitness in children? A systematic review. *International Journal of Environmental Research and Public Health*, 12(6), 6455–6474. <https://doi.org/10.3390/ijerph120606455>

Gronlund, C. J., Berrocal, V. J., White-Newsome, J. L., Conlon, K. C., & O'Neill, M. S. (2015). Vulnerability to extreme heat by socio-demographic characteristics and area green space among the elderly in Michigan, 1990–2007. *Environmental research*, 136, 449-461.

Harris, F. (2018). Outdoor learning spaces: The case of forest school. *Area*, 50(2), 222-231.

Hernández Sampieri, R., Fernández Collado, C., & Baptista Lucio, P. (2006). *Metodología de la investigación* (4th ed.). México: McGraw-Hill.

Hinds, J., Sparks, P. (2008). Engaging with the natural environment: The role of affective connection and identity. *Journal of Environmental Psychology*, 28 (2) (2008), pp. 109-120, [10.1016/j.jenvp.2007.11.001](https://doi.org/10.1016/j.jenvp.2007.11.001)

Kiran, G. (2021). Examining the Role of Availability Heuristic in Climate Crisis Belief. *Berkeley Scientific Journal*, 26(1).

Developing environmental preservation through experiences in nature in early childhood education

Kobayashi, H., Ueoka, R. & Hirose, M. 2008. Wearable forest-feeling of belonging to nature. Association for Computing Machinery, New York, NY, USA, 1133–1134. <https://doi.org/10.1145/1459359.1459600>

Kondo, M., Fluehr, J., McKeon, T., & Branas, C. (2018). Urban green space and its impact on human health. *International Journal of Environmental Research and Public Health*, 15(3), 445. <https://doi.org/10.3390/ijerph15030445>

Laforet, A. (9 de junio del 2019). Cortometraje para concienciar de la contaminación medioambiental. Youtube. [\(3\) CORTOMETRAJE PARA CONCIENCIAR DE LA CONTAMINACIÓN MEDIOAMBIENTAL - YouTube](#)

Leviston, Z., & Uren, H. V. (2020). Overestimating one's "green" behavior: Better-than-average bias may function to reduce perceived personal threat from climate change.

Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. New York: Workman Publishing.

Lukin, J. G. (2014). *Actividades y recursos para la educación ambiental en educación infantil*. España: Universidad de La Rioja.

Mackey, G. (2015). *Ecological Identity: Learning to Love Your Place*. *OMEP: Theory into practice* 2019. [THEORY INTO PRACTICE2.pdf \(omepworld.org\)](#)

Marcén, C., & Benegas, J. (1995). La Educación Ambiental como desencadenante del cambio de actitudes ambientales. *Revista Complutense de Educación*, 6(2), 11.

Mihaylov, N., & Perkins, D.D. (2014). Community Place Attachment and its Role in Social Capital Development in Response to Environmental Disruption. In L. Manzo & P. Devine-Wright (Eds.), *Place Attachment: Advances in Theory, Methods and Research* (pp. 61-74)

Montessori, M. (2014). *La mente absorbente del niño*, Ámsterdam, Montessori-Pierson Publishing Company. [la-mente-absorbente-del-nino-montessori-pdf.pdf \(wordpress.com\)](#)

Musitu-Ferrer, D., Esteban Ibáñez, M., León-Moreno, C., Callejas Jerónimo, J. E., & Amador-Muñoz, L.V. (2020). Fiabilidad y validez de la escala de actitudes hacia el medio ambiente natural para adolescentes (Aman-a). *Revista de Humanidades*, 39, 247-270.

Otto, S., & Pensini, P. (2017). Nature-based environmental education of children: Environmental knowledge and connectedness to nature, together, are related to ecological behaviour. *Global Environmental Change*, 47, 88-94.

Pearce, H., Hudders, L., Van de Sompel, D., & Cauberghe, V. (2021). Motivating children to become green kids: The role of victim framing, moral emotions, and responsibility on children's pro-environmental behavioral intent. *Environmental Communication*, 15(7), 969-985.

Pérez-Martín, J. M., González-Patiño, J., Esquivel-Martín, T., Ambrona, T., Bravo-Torija, B., & Atrio-Cerezo, S. (2019). Marine Litter Hub: Comunidad de aprendizaje expandida en Secundaria. En M. González Montero de Espinosa, A. Baratas Díaz, & A. Brandi Fernández (Eds.), *Experiencias didácticas en el ámbito STEM. Investigación y Didáctica en Ciencia, Tecnología, Ingeniería y Matemáticas*. (pp. 183-190). Editorial Santillana.

Pineda Rodríguez, R., & Pinto Vallejo, L. M. (2018). *Estrategias didácticas en educación ambiental para el fortalecimiento de buenas prácticas ambientales* (Master's thesis, Escuela de Educación y Pedagogía).

Pinillas Fernández, S., & Torralba Burrial, A. (2021). El cuaderno de campo como eje del aprendizaje de naturaleza cercana en Educación Infantil. *Revista Eureka sobre Enseñanza y Divulgación de las Ciencias*, 18.

Pritchard, A., Richardson, M., Sheffield, D., McEwan, K. (2020). The Relationship Between Nature Connectedness and Eudaimonic Well-Being: A Meta-analysis. *J. Happiness Stud.*, 21 (3) (2020), pp. 1145-1167 <https://doi.org/10.1007/s10902-019-00118-6>

Ramkissoon, H. and Mavondo, F. and Uysal, M. 2017. Social involvement and park citizenship as moderators for quality-of-life in a national park. *Journal of Sustainable Tourism*.

Richie, M., & Josephson, S. A. (2018). Quantifying heuristic bias: Anchoring, availability, and representativeness. *Teaching and learning in Medicine*, 30(1), 67-75.

Ridder, B. (2005). Reorienting environmentalism to nature-inspired-autonomy. *Griffith Journal of the Environment*, 1, 1–26.

Ruiz, R. d., & Castañeda, M. A. (2016). Relación entre uso de las nuevas tecnologías y sobrepeso infantil, como problema de salud pública. *RqR Enfermería Comunitaria*, 4(1): 46-51.

Schiebel, T., Gallinat, J., & Kühn, S. (2022). Testing the Biophilia theory: Automatic approach tendencies towards nature. *Journal of Environmental Psychology*, 79, 101725.

Schutte, A. R., Torquati, J. C., & Beattie, H. L. (2017). Impact of urban nature on executive functioning in early and middle childhood. *Environment and Behavior*, 49(1), 3–30. <https://doi.org/10.1177%2F0013916515603095>

Silva, N. D. V. R. (2017). Huerto Escolar como Estrategia Pedagógica de la Sustentabilidad en la Educación Ambiental.(Proyecto en ejecución). *Revista Científic*, 2(Ed. Esp.), 355-375.

Skar, M., Wold, L. C., Gundersen, V., & O'Brien, L. (2016). Why do children not play in nearby nature? Results from a Norwegian survey. *Journal of Adventure Education and Outdoor Learning*, 16(3), 239-255.

Smith, W. (2019). The role of environment clubs in promoting ecocentrism in secondary schools: student identity and relationship to the earth. *The Journal of Environmental Education*, 50(1), 52-71. <https://doi.org/10.1080/00958964.2018.1499603>

Takano, T., Nakamura, K., & Watanabe, M. (2002). Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *Journal of Epidemiology & Community Health*, 56(12), 913-918.

Thomashow, M. (1996). *Ecological Identity: Becoming a Reflective Environmentalist*. Cambridge, EE. UU.: MIT Press.

Thompson, C. W., Aspinall, P., & Montarzino, A. (2007). The Childhood Factor: Adult Visits to Green Places and the Significance of Childhood Experience. *Environment and Behavior*, 40(1), 111–143.

Tillmann S., Tobin D., Avison W., Gilliland J. Mental health benefits of interactions with nature in children and teenagers: A systematic review. *Journal of Epidemiology & Community Health*. 2018;72(10):958–966. doi: 10.1136/jech-2018-210436.

Torres-Porras, J.; Alcántara, J.; Arrebola, J.C.; Rubio, S.J.; Mora, M. (2016) Trabajando el acercamiento a la naturaleza de los niños y niñas en el Grado de Educación Infantil. Crucial en la sociedad actual. *Revista Eureka sobre Enseñanza y Divulgación de las Ciencias* 14 (1), 258-270.

Valentine, G.; McKendrick, J. (1997). Children's outdoor play: exploring parental concerns about children's safety and the changing nature of childhood. *Geoforum*, 28 (2) pp. 219-235

Van Truong, M., Nakabayashi, M., & Hosaka, T. (2022). How to encourage parents to let children play in nature: Factors affecting parental perception of children's nature play. *Urban Forestry & Urban Greening*, 69, 127497.

Veitch, J.; Bagley, S.; Ball, K.; Salmon, J. (2006). Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health Place* 2006, 12, 383–393.

Veselinovska, S. S., S. Petrovska and J. Zivanovic (2010) 'How to Help Children Understand and Respect Nature'? *Procedia-Social and Behavioral Sciences* 2(2): 2244–7. DOI: 10.1016/j.sbspro.2010.03.316.

Villanueva Blas, H. D., Medina Moreno, O. A., & Sánchez Huarcaya, A. O. (2020). Estudio documental: importancia de la educación ambiental en la educación básica. *Revista Iberoamericana Ambiente & Sustentabilidad*, 3(1), 6-14. <https://doi.org/10.46380/rias.v3i1.4>

Whitburn, J., Linklater, W., & Abrahamse, W. (2020). Meta-analysis of human connection to nature and proenvironmental behavior. *Conservation Biology*, 34(1), 180-193.

White, R., & Stoecklin, V. L. (2008). Nurturing children's biophilia: Developmentally appropriate environmental education for young children. *Collage: Resources for early childhood educators*, 1-11.

Wilson, E. O. (1984). *Biophilia*. Massachusetts: Harvard University Press

Wyles, K., White, M.P., Hattam, C., Pahl, S., King, H., & Austen, M. (2019). Are Some Natural Environments More Psychologically Beneficial Than Others? The Importance of Type and Quality on Connectedness to Nature and Psychological Restoration. *Environment and Behavior*, 51, 111 - 143.

## ANNEXES

### - Annexe 1

Child C: The grass and the flowers.

Researcher: Why did you draw this?

Child C: I don't know.

Researcher: Did you smell the flowers?

Child C: Yes

Researcher: Did you like it?

Child C: Yes

Researcher: How did you feel?

Child C: Good!

Figure 4. Child C's drawing.



Figure 5. Child D's drawing.

Child D: I'm stuck here in the grass lying down and I can't get out.

Researcher: And why?

Child D: Because it tickled me

Researcher: Did that happen to you in the outing?

Child D: Ye, the grass tickled me

Researcher: Did you like it?

Child D: Yes.





Figure 6. Child E's drawing.

Child E: This is me running and this is the dog.

Researcher: Is that what you liked the most?

Child E: Yes.

Researcher: Why?

Child E: Because I have done sports.

Researcher: And how did you feel?

Child E: Good!



Figure 7. Child F's drawing.

Child F: This is the sign we saw at the entrance to the park

Researcher: The one that was written "Parque de los Aromas"?

Child F: Yes. This is brick, this is a giant stone that reaches to the sky.

Researcher: Did you see that in the park?

Child F: Yes, the "piruli" (the tower).

Researcher: Did you like the outing?

Child F: Yessssssssss!

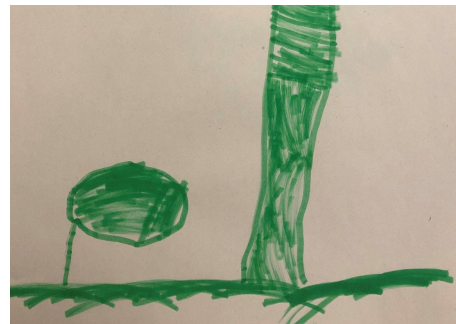


Figure 8. Child G's drawing.

Child G: Two flowers and this is the sky and this is the grass.

Researcher: Why did you draw this?

Child G: Flowers are what I like the most.

Researcher: Did you enjoy the outing?

Child G: Yesssss, I have gone there so many times!



Figure 9. Child H's drawing.

Child H: Leaves, flowers and grass.

Researcher: Why did you draw that?

Child H: Because I like it.

Researcher: How did you feel?

Child H: Good!





Researcher: I like the flowers with so many colors.

Child H: We don't have to pull them out.

Child I: A person was walking on the grass

Researcher: Who is the person?

Child I: Aleia

Researcher: Why did you paint that?

Child I: I don't know, I just remembered it.

Researcher: Did you enjoy the experience?

Child I: Yes.

Figure 10. Child I's drawing.

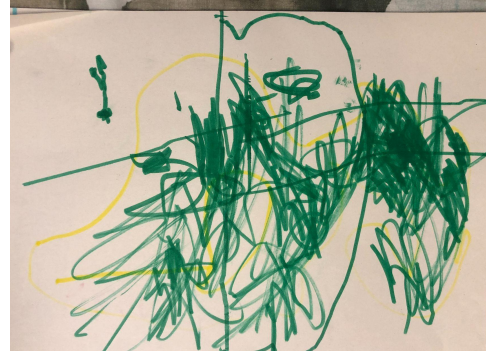


Figure 14. Nature corner.

- **Annexe 2**

This is the nature corner created by this group. The corner contains; leaves, pine cones, stones, flowers, activities and games, stories, lentils grown in jars, and information about animals and plants such as the anatomy of the flower and tree.



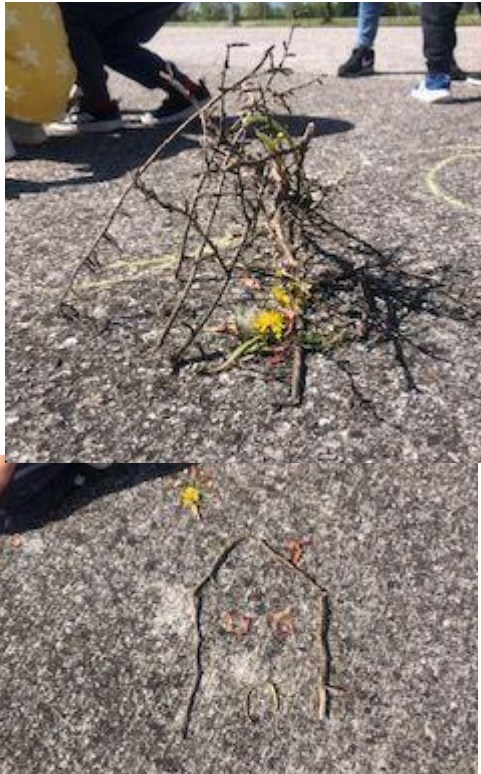
- **Annexe 3**

Figure 15. A helicopter flower



Figure 16. House.

Figure 17. Spider's cave.



- **Annexe 4**

Figure 18. Shadow outlining.



- **Annexe 5**

Figure 19. Drawing including natural elements.

