

SPACES THAT INSPIRE: PRESCHOOL EDUCATION BEYOND THE FOUR WALLS

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Abstract

This study focuses on the importance of outdoor spaces as educational environments in preschool education, exploring their potential to promote meaningful, integrated learning and contribute to children's overall development. Recognising the importance of direct contact with nature, the research aimed to understand children's perceptions of outer space and develop strategies and interventions to optimise this environment, enabling it to serve as an extension of the indoor space and the pedagogical context. The main objectives were to improve the quality of outdoor spaces in pre-school institutions by promoting the diversification of materials and resources according to the children's interests and needs; to create an outdoor educational space that favours exploration, play, creativity, and the development of socio-emotional skills; and to understand children's perceptions of this space by valuing their voices and experiences in the educational process. A qualitative methodology was adopted, and several data collection instruments were used, including participant observation, photographic records, children's work and structured questionnaires. The practical intervention focused mainly on the kindergarten, where activities related to nature were promoted, such as constructing herbariums, producing vegetable paint, stamping with natural elements, and creating and maintaining a pedagogical garden. At the same time, the institution's exterior was renovated with new materials and unconventional equipment to encourage risky play, curiosity, autonomy, and direct interaction with the natural environment. The data collected showed that children strongly value contact with the outdoors and associate it with the pleasure of playing and learning outside. Activities involving natural elements were identified as favourites, revealing high levels of enthusiasm and interest in the diversity of natural resources and the potential for their free and directed exploitation. Additionally, the importance of outdoor spaces within a family context was recognised, emphasising the need for greater appreciation and utilisation of these spaces within institutional educational practices to promote a continuous connection between family and school environments. The results confirm that outdoor spaces should be considered true educational environments capable of providing challenging, integrated learning contexts sensitive to the needs, interests, and rhythms of children. Educational continuity between indoor and outdoor environments is a key factor in enhancing children's cognitive, social, and emotional development, and reinforces their active, conscious, and respectful connection with the natural world. Thus, this study contributes to reflection on and appreciation of outdoor spaces in pre-school education, advocating for their integration as a fundamental component of the educational process that fosters exploration, creativity, autonomy, and the holistic development of children.

Keywords: Outdoor education, preschool, nature-based learning, children voices, holistic development.

1 INTRODUCTION

Childhood is a period of intense discovery in which the environment plays a fundamental role in a child's learning and overall development. The educational curriculum guidelines for preschool education in Portugal (OCEPE) define outdoor space as a "privileged place" [1, p. 27], where children can engage in activities, providing opportunities to develop forms of social interaction and establish contact with nature and its resources. OCEPE also describes the outdoor space as a kind of extension of the educational context that deserves the same attention given to indoor areas [1].

Outdoor spaces foster unique characteristics such as experiences, challenges, risks, and even learning opportunities that are impossible to recreate and experience within four walls [2], [3]. Factors such as unpredictability, the expanse of space, and contact with natural elements generate a quality pedagogical environment that should be valued and designed with the same attention and care as indoor spaces.

Playing outdoors is an excellent means of learning, as the sensory experiences occurring in these spaces engage the whole child, stimulating them to be active constructors of their own knowledge [2].

Playing and exploring outdoors allows children to experience sensations and challenges that open different ways to learn, communicate, and interact.

The interaction children develop with the outdoor environment “forms the basis for developing a sense of belonging to the space, a connection to the world, and, consequently, forms the basis for adopting positive and proactive attitudes toward the environment” [2, p.92]. In other words, regular contact with outdoor spaces gives children a broader view of their surroundings, making them more conscious and responsible citizens regarding these spaces. A study conducted in the United States shows that, among children who regularly participate in outdoor activities, 78% have greater concentration skills, and 75% are more creative and better prepared for problem-solving [4].

Playing outdoors and exploring the natural environment helps children develop a sense of well-being on physical, cognitive, social, and emotional levels [4]. Cognitively, it enhances observation skills, attention, and curiosity that foster a desire to know, understand, and discover. Additionally, it is proven that frequent outdoor activity increases children's relaxation levels and, consequently, their concentration, which facilitates learning.

Facing challenges and obstacles outdoors, during play and exploration, builds children's self-esteem and confidence, thus stimulating some emotional skills [5]. As for the contribution of outdoor environments to social development, children show greater interaction with their peers when involved in challenges and unexpected events in these spaces, resulting in interesting idea-sharing and the joint search for problem-solving strategies [2], [5].

Outdoor spaces are full of objects and natural resources unique to these environments, offering children different forms of exploration and memorable experiences. The resources nature offers “spontaneously and unpredictably become more interesting to children than manufactured objects, made of plastic and with a pre-defined purpose” [6, p.48].

While acting and exploring in nature, children encounter various objects, immediately assigning them different meanings and functionalities, using imagination and creativity, in contrast to manufactured objects that already have a defined utility. The constant reinvention and attribution of new meanings to natural resources lead to “the mobilization of concepts related to science, literacy, math, among others” [6, p.49]. Furthermore, children who frequently explore natural resources begin to gain new knowledge, gradually internalizing the processes involved. The frequent use and exploration of natural resources test their motor limits and provides feelings of happiness, playfulness, and comfort [6]; [7]

The literature also highlights the role of adults as mediators and facilitators of innovative pedagogical experiences in outdoor contexts. They are responsible for creating safe yet challenging environments that respond to children's interests and enhance meaningful learning. In this regard, it is important to adopt educational practices that integrate the exploration of natural resources as teaching materials, thereby strengthening the link between education and sustainability [7].

In summary, the outdoor space emerges as an inspiring educational context that transcends the physical boundaries of the classroom. It becomes a setting of multiple possibilities where playing, exploring and interacting become learning processes with a lasting impact. Thus, envisaging preschool education 'beyond the four walls' means recognising outdoor environments as spaces for integral development, citizenship and cultivating a conscious and responsible relationship with the natural world.

2 METHODOLOGY

The research took a qualitative approach, which is well-suited to gaining an in-depth understanding of educational practices and children's perceptions of outdoor spaces in preschool education. The main objectives were: (i) improving the quality of outdoor areas in institutions by diversifying materials and resources according to children's interests and needs; (ii) creating an outdoor educational environment that fosters exploration, play, creativity and socio-emotional skill development; (iii) understanding children's perceptions and valuing their voices and experiences within the educational process.

To achieve these objectives, various data collection methods were employed to provide a comprehensive view of the subject. Participant observation enabled the systematic recording of interactions, behaviours and emerging learning in outdoor contexts. Photographic records served as visual evidence of the intervention, documenting processes and outcomes. Additionally, the children's work was analysed as an expression of their learning and creativity. Finally, structured questionnaires provided access to the children's own perceptions, ensuring that their views were explicitly incorporated into the study. The data collected through the structured questionnaire, complemented by field notes and photographic records,

provides a comprehensive picture of how children perceive and value the outdoor environment in the kindergarten. Although the questionnaire was intentionally simple to match the developmental stage of the participants, the diversity of responses reflects the richness of their experiences and the central role of the outdoor space in their daily learning.

A total of thirteen children participated in the questionnaire, nine boys (69%) and four girls (31%), ranging in age from three to five years old. The age distribution was heterogeneous, with a predominance of three-year-olds (46%), followed by four-year-olds (31%) and five-year-olds (23%). This diversity of ages within the same group highlights the necessity of designing outdoor activities that are flexible and inclusive, offering differentiated possibilities for exploration and learning.

3 RESULTS

In the context of the pedagogical intervention carried out in the kindergarten, three learning experiences were designed and implemented, each aiming to explore the educational potential of outdoor environments while responding to children's interests and developmental needs. The first experience: Let's make a herbarium!, focused on observation and classification of natural elements, fostering scientific curiosity and collaborative work. The second, What can we do with plants?, explored the multifaceted uses of plants in both food and artistic expression, stimulating sensory exploration and creativity. Finally, A renewed outdoor space reflected a collective process of transforming the outdoor area of the institution, engaging children and the educational community in creating a more diverse, challenging, and inspiring learning environment. Together, these experiences illustrate how the integration of nature-based activities and outdoor pedagogical practices can enrich preschool education, encouraging autonomy, cooperation, and meaningful connections with the natural world.

3.1 Learning Experiences

3.1.1 *Let's make a herbarium!*

The first experience aimed to bring children closer to scientific knowledge, encouraging observation and classification of natural elements. The process began with the decoration of the collective herbarium cover, during which children mobilised their prior knowledge by associating colours with the leaves they had seen: *"I have already seen brown, yellow and green leaves"* (Field notes, 21/02/2022). This activity, carried out in pairs, fostered not only aesthetic expression but also respect, cooperation, and appreciation of each child's contribution.

In the next phase, the group visited a public garden to collect leaves from different species. The children showed enthusiasm, curiosity, and commitment in identifying and gathering diverse leaves, demonstrating attention to detail and an exploratory spirit (figure 1).



Figure 1. Collect leaves.

Back at school, they worked on classifying the leaves according to size, colour, smell, and texture (figures 2, 3, 4).



Figures 2, 3 and 4. Classification of the collected leaves.

The use of the *PlantNet* application allowed for more accurate botanical identification, adding a scientific and digital dimension to the activity.

The experience concluded with the collage of the leaves into the collective herbarium, (figures 2, 3, 4) which became a shared record and tangible outcome of the group's involvement. This activity was particularly meaningful as it connected outdoor and indoor environments, promoting cognitive, scientific, sensory, and social learning.

3.1.2 What can we do with plants?

The second experience explored the multiple uses of plants, focusing on both food and artistic expression. In the first phase, conducted indoors, children actively participated in preparing anise and cinnamon cookies and making chamomile infusion. This moment engaged all senses and contributed to the promotion of healthy eating habits. Their understanding was captured in a spontaneous comment: *"because they were made with plants"* (Field notes, 22/02/2022). Beyond the enjoyment of taste, the activity offered an opportunity to reflect on the origins of food and its connection to nature.

In the second phase, conducted outdoors, children were invited to use natural elements as artistic resources, applying the technique of stamping. Leaves, flowers, and stones were used as creative matrices, revealing different styles of experimentation: some children chose to colour the items with brushes, while others dipped them directly in paint (figures 5 and 6).



Figures 5 and 6. Stamping.

This diversity of approaches highlights the importance of free experimentation and creativity in the learning process. The resulting artistic productions displayed imagination, resourcefulness, and the ability to transform natural elements into meaningful, multisensory pedagogical experiences.

3.1.3 A renewed outdoor space

The third experience represented the materialisation of one of the project's central goals: transforming the institution's outdoor space into a more inclusive, challenging, and pedagogical environment.

The process unfolded in three interconnected stages. The first focused on the production of paints using vegetables such as carrot, spinach, and beetroot. The children formulated hypotheses about the colours that might emerge: *"I think with carrot we will make orange"* (Field notes, 02/03/2022). This exercise stimulated scientific reasoning, prediction, and curiosity.

In the second stage, the children used the paints to decorate the cover of a tent installed outdoors (figure 7). This activity generated enthusiasm, creativity, and a sense of cooperation, allowing them to perceive in a concrete way the impact of their actions in transforming the school environment.



Figure 7. Paint using vegetables.

Finally, with the involvement of families and the educational community, new materials and unconventional equipment were introduced into the outdoor space. The result was a renovated environment, enriched with opportunities for exploration and risky play. The children demonstrated autonomy, curiosity, and eagerness to engage with the new elements, showing that the outdoor space had become more attractive and inspiring.

3.2 Children's perceptions of the outdoor space

Analysing children's perceptions of outdoor spaces reveals that they are highly valued as stimulating environments associated with freedom, exploration, contact with nature and social interaction. The concept of freedom was emphasised by 70% of the children, who said they felt more independent and had more control over their activities outdoors. One child said, 'In the garden, I can choose what I want to do. In school, I can't do as much', while another remarked, 'I like running and doing whatever I feel like'. These perceptions suggest that the outdoor space is viewed as a context of greater autonomy, where children can manage their own time and activities. This is in contrast to the structured environment of the classroom.

Around 65% of the children emphasised that the outdoor space allows for direct contact with natural elements, fostering diverse sensory and motor experiences. One child said, 'I like touching the leaves and the soil; it's different from inside the classroom', while another noted, 'It's fun to see the insects and the plants growing'. These comments reveal that sensory exploration and observing nature are central to children's positive perceptions of the outdoor environment.

The physical aspect of outdoor spaces was mentioned by 84% of children, who associated being outdoors with having the opportunity to run, jump and explore freely. One child said, "In the playground, I can run around a lot; inside the classroom, I can't". Therefore, outdoor space is perceived as a place that allows full bodily expression, promoting health, coordination, and physical well-being.

The outdoor space was also identified as an ideal setting for group play, sharing discoveries and developing social relationships. Around 60% of the children mentioned this aspect. One child said, 'Out

here, we can all play together and invent games'. Thus, the outdoor space is recognised as an environment that fosters social interaction and cooperation, providing learning experiences that complement those in the classroom.

A common perception, reported by 70% of children, is that they spend more time outdoors at home than at school. One child stated, 'At home I can play in the garden for longer, but at school I can only play for a little while'. This observation shows that children perceive the home environment as offering greater freedom, flexibility and continuity in outdoor exploration. This reinforces the emotional and motivational value of outdoor experiences in their daily routine.

In summary, children's perceptions indicate that outdoor spaces are highly valued for the freedom, contact with nature, movement and social interaction they provide, as well as the activities carried out in them. These findings suggest that schools could benefit from strategies that increase the diversity and duration of outdoor experiences, bringing them closer to what children recognise as the most enjoyable and meaningful aspects of the home environment.

4 CONCLUSIONS

The study confirmed that outdoor environments are indeed "*spaces that inspire*", as they promote diverse, creative, and sustainable learning opportunities in preschool education. The children attributed significant value to the activities carried out, particularly those involving direct contact with nature, hands-on experimentation, and artistic expression. These findings highlight the central role of the outdoor environment in expanding the boundaries of learning beyond the classroom walls and in fostering meaningful experiences that resonate with children's interests and everyday discoveries.

The renovation of the outdoor area illustrated the importance of designing non-conventional and challenging environments that stimulate children's curiosity while fostering autonomy, confidence, and socio-emotional skills. By introducing new and unconventional materials, the playground became a richer and more engaging space, where risky play was encouraged not as a hazard but as a valuable educational opportunity. This controlled exposure to risk promoted resilience, problem-solving, and self-regulation, echoing the idea that outdoor experiences provide conditions for integral child development.

Equally significant was the role of the educator as mediator and facilitator. The creation of safe yet stimulating outdoor contexts relied on the intentionality of pedagogical practices, capable of transforming ordinary natural elements into powerful learning resources. By valuing children's voices and experiences, educators ensured that the learning process was not only meaningful but also inclusive and participatory. This approach reinforced the connection between education and sustainability, contributing to the development of ecological awareness and a sense of responsibility towards the natural environment from an early age.

In conclusion, investing in outdoor spaces as educational contexts is essential for 21st-century preschool education. Such environments combine cognitive, social, emotional, and physical dimensions of development, while simultaneously nurturing creativity, citizenship, and environmental responsibility. To think of preschool education "*beyond the four walls*" means to recognise the outdoors as a pedagogical territory of inspiration, where play, exploration, and interaction converge into holistic and lasting learning experiences.

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