

Student and teacher perceptions of the outdoor experience on traditional playgrounds: a case study

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ABSTRACT

Outdoor education fosters student well-being, development and learning. However, many schools restrict outdoor experience to their own playground, and to times considered recess. This case study, which examined student and teacher perceptions about the outdoor experience on traditional playgrounds, was conducted in an urban school in the Basque Country with an asphalt playground whose only resources were related to sports. We conducted five focal studies with 40 students, and administered a questionnaire to 78 teachers in Primary and Secondary Education. The results obtained made clear the dissatisfaction of both students and teachers with the use of the playground and with the opportunities it offered. However, they also identified areas for improvement and suggested future lines of work. It is essential to promote a dynamic of reflection on outdoor spaces that includes student participation as well as training teachers and raising their awareness.

KEYWORDS

Outdoor education; student perceptions; teacher perceptions; participation; playground

Introduction

As a result of the health crisis caused by COVID-19, numerous studies and recommendations have called for greater use of outdoor spaces as a measure to prevent the transmission of aerosols and thereby reduce the chances of contagion (De Lannoy et al., [2020](#); Rowe et al., [2021](#)).

However, the benefits of outdoor education are not limited to aspects related to the pandemic. In general, the use of outdoor spaces has been associated with higher levels of well-being, health and quality of life (Tillmann et al., [2018](#)), and with lower levels of stress (Largo-Wight et al., [2018](#)). Likewise, open-air experiences of different kinds, such as forest schools or nature immersions, have been associated with greater physical activity and a lower number of sedentary behaviors (Gray et al., [2015](#)). In addition, quality outdoor experience has been associated with greater intrinsic academic motivation (Bølling et al., [2018](#)) and with better cognitive activity involvement and behavioral outcomes (Storli & Sandseter, [2019](#); Ulset et al., [2017](#)).

In fact, the outdoor context is considered to be an appropriate place to achieve educational objectives in an integrated and interdisciplinary way (Marchant et al., [2019](#)), as evidenced in a study carried out with Australian high school students in an intervention focused on learning and developing creative writing skills (Neville et al., [2021](#)). Outdoor space is also a place for interaction where adults are more focused on children and respond better to their needs (Maynard et al., [2013](#)). Likewise, outdoor space is considered to offer multiple opportunities for risky and challenging play (Sandseter et al., [2021](#)), the development of communication and reasoning skills, and relationship building with other children and adults (Mann et al., [2021](#)). Regarding social relations, it is considered that social play is encouraged outdoors (Veiga et al., [2017](#)), although it should be noted that group play predominates in spaces that offer a greater number of opportunities for play and facilitate greater contact with nature (Larrea et al., [2019](#)).

However, there are numerous school outdoor spaces that maintain a traditional design: excessively asphalted and with resources related primarily to sports (Larrea et al., [2019](#)). Furthermore, there have been few studies that have collected the perceptions of students and teachers about their outdoor experience in this type of context. The present study consisted of examining the perceptions of students and teachers about the outdoor experience on this type of playground.

Use and characteristics of school outdoor spaces

Outdoor education is a resource for student well-being, development and learning; however, several authors consider the outdoor experience to be quite limited in many educational centers (Miranda et al., [2017](#)). For this reason, considerable attention has been paid to the use and characteristics of school outdoor spaces (Miranda et al., [2017](#); Sando & Sandseter, [2022](#)). Given this underutilization of outdoor spaces, ‘friendly’ spaces for students are recommended (Broberg et al., [2013](#); Jansson et al., [2016](#); Muela et al., [2019](#)). From the point of view of environmental psychology, a space is considered friendly when it allows its users autonomous mobility and provides multiple opportunities to refresh their environmental perceptions (Broberg et al., [2013](#)). Therefore, in the field of education, it is suggested that spaces be provided that offer students opportunities to move around, play, interact, and face challenges and risks in close contact with nature (Miranda et al., [2017](#); Prieske et al., [2015](#)). Unlike in Scandinavian countries such as Norway, Denmark and Sweden, where there is a strong tradition of outdoor activities and outdoor education and there are outdoor spaces that offer a wide variety of opportunities for play in contact with nature (Remmen & Iversen, [2022](#)), the school playgrounds available at many schools in our area are far from what could be considered ‘friendly.’ Instead, they tend to be flat spaces, clearly intended for sports practice, asphalted, and lacking resources, whether natural or artificial, that would promote movement (jumping, sliding, climbing up or down), experimentation, or recreational activities beyond sports (Miranda et al., [2017](#)).

These designs are partly consistent with the scant presence of outdoor education, both in the educational curriculum of the local administration and in the training plans of teachers (Artola et al., [2017](#)). Furthermore, due to the small size of their outdoor space, many schools seek to have outdoor spaces that can also be used for extracurricular activities related to sports. This context indicates a clear need for the curricula and educational projects of the schools to take into account the promotion of play, learning and overall student development in outdoor spaces as well (Miranda et al., [2017](#); Norðdahl & Jóhannesson, [2015](#)). Along these lines, there are more and more initiatives aimed at promoting changes in

both the design and the use of school outdoor spaces (Muela et al., [2019](#); Prince, [2018](#)).

Student participation

It has been pointed out that, in order to achieve enriching open-air experiences for students, the outdoor space and its use require innovative actions. Along similar lines, in the last century, the United Nations Convention on the Rights of the Child (United Nations, [1989](#)) advocated for the importance of listening, in the broadest sense of the word, to children. The *2030 Agenda for Sustainable Development* (United Nations, [2015](#)) confirms the commitment to listen to minors and take them into account as subjects with rights, a voice and the capacity for participation and social interaction (Leonard, [2016](#)). The educational field is, without a doubt, a context in which child participation can be encouraged to give voice to students in all areas that concern them and thus give them the opportunity to develop their personal skills, their autonomy and their creativity, and to

grow as individuals in interaction with their peers (De Sousa et al., [2019](#)). In fact, based on the paradigm of sociocultural development, notable initiatives have been carried out to encourage child participation and to reflect jointly on educational spaces (Muela et al., [2019](#); Sando & Sandseter, [2022](#)). It should be noted that initiatives related to outdoor spaces have been developed specifically in Early Childhood Education and have confirmed children's attention to the physical characteristics of space and their desire for places that offer a variety of opportunities to develop different kinds of play (Muela et al., [2019](#); Sando & Sandseter, [2022](#)).

As in those cases, we understand that student participation is also a key element in their reflection on their outdoor experience at school, including in that experience the design of the space and the use of the space in interactions with their peers and teachers. Reflection on the outdoor experience may be more necessary in schools that have a traditional playground oriented toward sports and with little contact with nature, since it can contribute to the implementation of change processes

that give greater weight in the curriculum to the open-air experience (Miranda et al., [2017](#); Oberle et al., [2021](#)).

Teachers' perceptions

In order to turn outdoor experiences into intentional educational practices, the role of teachers is key (Larsson & Rönnlund, [2021](#); Prince, [2018](#); Sando & Sandseter, [2022](#); Tuuling et al., [2019](#)). For example, teacher attitudes influence children's outdoor play (van Rooijen et al., [2019](#)). These attitudes may be determined by cultural, legal-administrative factors, by the teacher's relationship with parents, by personal attitudes, or by their conception of the students. For their part, Lane et al. ([2018](#)) point out that openness to different teaching and learning methods, positive attitudes toward the environment, familiarity with ecological concepts, and the recognition that there is evidence of positive academic results are all associated with a greater receptiveness to experiences outside the classroom.

Along these lines, it is considered important to investigate the perceptions of teachers regarding their outdoor experiences, since they can influence the development of educational innovation initiatives based on open-air education. A number of previous studies suggest that some teachers associate the outdoor experience with freedom, play and autonomy (Waite, [2011](#)), as well as with adventure or creativity, even though their interventions may not be consistent with these concepts (McClintic & Petty, [2015](#)). In fact, it seems that some of the teaching staff, especially in schools with traditional playgrounds oriented toward sports and with limited use of those playgrounds, understand playground time as recess time; that is, as a rest from what is considered truly important or from preparation to respond better to what will happen later in the classroom. This fact shows a lack of comprehensive understanding of the benefits of outdoor education, including, among other things, children's socioemotional development and learning (Tuuling et al., [2019](#)), and thus also reflects the need for teachers to work on their professional skills in order to be able to recognize, understand and support different learning processes (Prince, [2018](#)).

Therefore, given the wide variety of factors that influence the perceptions and practices of teachers, a better understanding of those perceptions and practices is essential. In addition, like the students, it is also important that adults be actively involved in the reflection processes of the school. Their participation favors a deeper understanding of the subject, helps to create synergies among the people involved and promotes the implementation of change processes (Muela et al., [2019](#)).

The present study

In line with the above, the present study aims to examine the perceptions of students and teachers about the outdoor experience on traditional playgrounds. It is based on the view that the open-air experience has benefits for student well-being, development and learning. It should be noted that this case study was carried out at a school that, like many others, limits its students' outdoor experience to recess time on the playground, an asphalted place that offers limited contact with nature. In addition, we note that there are few studies in our area that have gathered the opinions of both students and teachers and fewer still on so-called traditional playgrounds. Therefore, this study aims to contribute to a better understanding of the perceptions of students and teachers in this context and, taking into account a large part of the educational community, identify the characteristics of the starting point to be able to develop educational innovation processes. We seek to answer the following questions:

- What perceptions do students at a school with a traditional playground have regarding their outdoor experience?
- What perceptions do teachers at a school with a traditional playground have regarding their outdoor experience?
- Are there differences among teachers in their perception of the student outdoor experience depending on the role the teachers adopt on the playground?

Materials and methods

Research design and case selection

To answer the questions posed, we used a multi-method case study design that allows us to address phenomena in real contexts and makes it possible to discern the idiosyncrasy of the particular (Yin, [2018](#)). Thus, on the one hand, a descriptive qualitative approach to inquiry was adopted (Sandelowski, [2000](#)), since the main objective was to obtain a rigorous description of the outdoor experience of both students and teachers on traditional playgrounds.

On the other hand, in order to examine whether there were differences among teachers in their perceptions of the student outdoor experience depending on the role the teachers adopt on the playground, a quantitative methodology was used to compare the average scores obtained on the ‘Questionnaire on perceptions of the school outdoor space.’

A school located in an urban environment in the Basque Country was selected for the present case study. The school has three paved and sports-oriented playgrounds around the building. A total of 481 Primary and Secondary students are enrolled. At all grade levels, the use of outdoor spaces is limited to recess, at which time the students receive no guidance about what they should do. However, both Primary and Secondary students are prohibited from leaving the school grounds. In addition, the outdoor space is used by students who stay at the school to eat lunch before resuming class in the afternoon.

Participants

A total of 40 students (20 girls and 20 boys) and 78 teachers from a school in the Basque Country participated in this case study. Regarding the students, our participants were two girls and two boys from each grade level from the first year of Primary Education to the fourth year of Secondary Education; thus, students aged between six and 15 years took part. Regarding the teachers, their ages ranged from 24 to 61 years ($M_{\text{age}} = 45.13$, $SD = 6.5$), 53 were women (67.9%), 23 were men (29.5%), and

two did not identify with either gender (2.6%). The teaching staff had an average experience of 17.67 years, and 79.5% were stable personnel at the school. Regarding the students, the sampling strategy used was that of purposive sampling; that is, the participants were selected based on the researchers' judgment about which participants would provide more information about their perception of the outdoor experience on traditional playgrounds. With regard to the teachers, all the teachers of the school participated, except for two who were on sick leave.

Data collection procedures

Two data collection techniques were used: focus groups and the administration of a questionnaire.

Focus groups

Five focus groups were formed, each composed of four male students and four female students. At the Primary level, one group included first and second grade students; another, third and fourth graders; and another, fifth and sixth graders. The Secondary level included two groups, one consisting of first- and second-year students (seventh and eighth graders), and the other of third- and fourth-year students (ninth and tenth graders). Thus, each focus group had a total of four students from each of two different grade levels.

Each focus group began by expressly asking the students if they wanted to participate in it. Once their consent was obtained, the same semi-structured script was followed in all groups, with appropriate adaptations depending on the participants' age. For example, before talking about their main activity in the outdoor space, Primary students in the first and second grades were first asked to draw a picture of what they normally do outdoors and then talk about it. Specifically, the focus groups began with an open-ended question about the current outdoor experience and ended with an enumeration of expectations and desires for the future. Active participation was encouraged at all times, thus allowing an open, spontaneous and in-depth exploration of the students' perceptions. The main objective was to obtain a clear vision of their experiences, their points of view, and their opinions and suggestions about their outdoor experience and about the spaces in question (see Appendix 1). The focus

groups lasted between 35 minutes (for the group with Primary students in the first and second grades) and 65 minutes (Secondary students in the ninth and tenth grades).

Questionnaire on perceptions of the school outdoor space

The perceptions of the school outdoor space of Primary and Secondary teachers were obtained through a questionnaire that was an instrument created for this study, composed of 18 items and seven open questions. The theoretical considerations and the conclusions and recommendations of various studies related to the area under study were followed to construct the questionnaire (McClintic & Petty, [2015](#); Tuuling et al., [2019](#); Waite, [2011](#)). The first version of the questionnaire consisted of 26 items.

In order to determine the extent to which the content of the questionnaire was coherent and appropriate for its particular objectives, an evaluation was carried out by a group of experts, specifically, four expert judges (three women and one man). The following criteria were followed to select the panel of experts: experience related to the concept under consideration, availability, motivation to participate, and impartiality.

After both the purpose of the questionnaire and the aspects and indicators measured by each of the items were defined for the experts, a consensus was reached through discussion regarding the validity of those aspects and of the items on the questionnaire. Through this instrument (see Appendix 2), the teacher makes an assessment of the suitability of the school outdoor space on a Likert scale from 1 to 10. A score in the range of 1–3 is considered to indicate very low suitability, 4–6 is moderate, 7–8 is high, and more than 8 indicates very high suitability. In addition, two key aspects of the functions that school outdoor spaces are considered to have are evaluated: (1) a factor that alludes to Learning and Cognitive Development, consisting of 4 items (e.g. ‘The outdoor space contributes to improving the students’ level of attention.’); and (2) one that measures Socio-emotional Development, composed of 8 items (e.g. ‘The use of outdoor space is important for student relationships.’). The 12 items are rated on a Likert scale ranging from 1 = ‘Completely

disagree' to 7 = 'Completely agree.' The sum of the scores yields a total score for each aspect, ranging from 4 to 28 for Learning and Cognitive Development, and from 8 to 56 for Socio-emotional Development.

The questionnaire also measures perceptions of the role of teachers in the school outdoor space (e.g. 'In the outdoor space, the main function of the teaching staff is to observe.'). This section consists of 5 items to be rated on a 7-point Likert scale, where 1 indicates very low agreement and 7 corresponds to a high degree of agreement. In the present study, to obtain different profiles depending on the perception of the role that teachers adopt in the school outdoor space, the items were dichotomized so that values from 1 to 4 mean low agreement with the proposed category and scores in the range from 5 to 7 mean high agreement. Thus, we obtained a profile of teachers during the time they spend in the school outdoor space that addressed the following categories: exercising a greater or lesser role of observer; more propositional vs. less propositional; more or less involved in conflict management; more or less aimed at promoting student activity; more or less directed at interacting with students. Finally, the open-ended questions were intended to obtain the impression that teachers have regarding the school outdoor space of their own school (e.g. 'What word(s) would you use to describe your school's outdoor space?'). In the present study, the internal consistency of the Learning and Cognitive Development factor was $\alpha = .70$, while the Socio-emotional Development aspect earned an internal consistency score of $\alpha = .74$.

Qualitative data analysis

Qualitative content analysis (Neuendorf, [2017](#)) was used to examine student responses. This is a dynamic method of verbal data analysis aimed at summarizing the informative content of the data. An inductive process was followed. First, all participants' responses were transcribed literally and entered into a database. The researchers then read all the material to familiarize themselves with the data. Next, the condensed and coded units of meaning were identified. Each of these units of meaning referred to a perception of the outdoor experience on the playground at the school. Subsequently, the codes were interpreted and

compared for differences and similarities, and classified into 14 provisional sub-themes. Through a process of reflection and discussion, the authors agreed on 8 subtopics, and finally formulated 3 themes that unified the content of the subtopics. These categories were constructed with the help of the MAXQDA qualitative analysis program.

Quantitative data analysis

Regarding the quantitative data from the 'Questionnaire on perceptions of the school outdoor space' for teachers, various descriptive analyses were carried out. In addition, in order to examine whether there were differences among the different teacher profiles in Learning and Cognitive Development and in Socio-emotional Development, the mean scores were compared. After verifying that the assumptions for the application of parametric tests were met, the Student's t-test was used to examine whether there were statistically significant differences between the means to be compared in the different criterion variables. The effect size was calculated using Cohen's *d*. Data analyses were carried out using the SPSS software program (V.26.0.).

Ethical considerations

This study was approved by our university's Ethics Committee. A research follow-up committee was formed, including both professionals from the school and the researchers. Both the families and the students themselves provided their consent to participate, the confidentiality and anon-ymity of the data were maintained, and no participant was discriminated against. Furthermore, the progress and findings of the study were shared with the research follow-up committee throughout the process.

Results

Student and teacher perceptions

Student perceptions

This section is organized around the descriptive themes of ‘outdoor activities,’ ‘outdoor experience’ and ‘wishes for the future,’ which categorize the perceptions of students regarding the activities in their current outdoor experience.

Outdoor activities. The subjects began by explaining their current outdoor experience ([Table 1](#)). In the Primary groups, the students stated that among their outdoor activities were various games such as Tag or Infection, as well as dancing and soccer. The number of activities and games mentioned was higher in the first- to fourth-grade focus groups. Some fifth and sixth graders showed a preference for soccer, and only two games were mentioned as alternatives to this sport activity. In addition, most students reported that on many days they spent their time outdoors talking to each other, without doing any other notable activity, and being with friends and chatting was the main activity specifically cited by the Secondary students. Some said that their outdoor experience was limited to chatting while they ate lunch, and that there was no time for anything else. Along these lines, in all focus groups and at all ages, several students stated that they participated in no specific activity or that they could not think of anything to do when they went to the playground: ‘I get bored. There’s nothing there. I’d rather stay in the classroom; at least there we have things to play with.’

Assessment of the outdoor experience. There were more negative comments than positive ones regarding the students’ outdoor experience. As shown in [Table 2](#), the lack of resources and the organization of the space were two of the aspects that most stood out as needing improvement. When asked what they liked least, the younger students pointed out the conflicts that arose from time to time among them and the lack of materials or resources for play. They stated that they would like to have ‘swings, slides . . . something fun,’ and some added that ‘a zip line would be cool.’ The older Primary students, on the other hand, criticized the overcrowding, noting that ‘soccer takes up all the space and there’s no room for anything else.’ This opinion was shared by the Secondary students who, for their part, were proactive in this regard, demanding ‘a better organization that spreads out the schedules more’ for the use of the playground, or ‘that limits soccer.’ Furthermore, some of them requested greater freedom for their group: ‘it would be good to

be able to leave the school grounds’ because ‘sometimes I feel as if I were in a prison yard, unable to leave and under the surveillance of the adults.’

Table 1. Main outdoor activities.

Activity	No. of times cited	No. of children citing	
Primary 1-2	Games	19	7
	Socio-dramatic	7	6
	Soccer	7	3
Primary 3-4	Games	18	8
	Sports	8	3
	Chatting	6	5
Primary 5-6	Games	9	5
	Sports	10	3
	Chatting	20	8
Secondary 1-2	Eating lunch	19	8
	Sports	8	2
	Chatting	28	8
Secondary 3-4	Eating lunch	22	8
	Going to the rest room	12	5
	Chatting	32	8

Table 2. Assessment of the outdoor experience.

Assessment	No. of times cited	No. of children citing
Primary 1-2 Playing is fun	12	7

	Lack of resources	10	6
	Do not like conflicts between children	5	3
Primary 3-4	Playing is fun	14	6
	Lack of resources	11	6
	Do not like conflicts between children	6	2
Primary 5-6	Playing is fun	12	7
	Lack of resources	10	5
	Do not like conflicts between children	5	4
Secondary 1-2	Playing is fun	21	8
	Lack of resources	17	6
	Do not like conflicts between children	7	2
Secondary 3-4	Playing is fun	29	8
	Lack of resources	15	7
	Do not like conflicts between children	10	8

Table 3. Wishes for the future.

Assessment	No. of times cited	No. of children citing	
Primary 1-2	Green areas	15	7
	Challenging equipment	13	8
	Relaxing areas	4	2
Primary 3-4	Green areas	10	7

	Challenging equipment	18	6
	Relaxing areas	7	4
Primary 5-6	Green areas	20	7
	Challenging equipment	16	5
	Relaxing areas	9	6
Secondary 1-2	Green areas	22	8
	Challenging equipment	24	7
	Relaxing areas	19	8
Secondary 3-4	Greater freedom	16	8
	Green areas	19	7
	Relaxing areas	20	8

Wishes for the future. As shown in [Table 3](#), the students expressed their wishes for their outdoor experience in the future.

Lastly, the students expressed their wishes for their outdoor experience in the future. In all focus groups, ‘green areas, with grass, trees, stones’ were requested. They also said they would like to have ‘fun things,’ referring to items that could test their motor skills such as equipment for climbing, sliding or balancing. In contrast, they also indicated that they would like to have secluded quiet spaces, where they could ‘chat with friends’ or ‘play without being seen.’ From a more pedagogical perspective and mentioning a previous experience, two Secondary students indicated the possibility of ‘holding some classes outside’ since ‘one time we went to the playground and started to draw what we saw.’ Another time, ‘we were writing poems’ and they found it a ‘different’ and ‘fun’ experience. However, no other students mentioned any other such previous experience or any possibility of integrating the classroom experience with the outdoor experience.

Teacher perceptions

Assessment of the school's outdoor space. With regard to the teachers' assessment of the outdoor space of their school, it should be noted that the majority (63.5%) believed it to be highly unsuitable to promote a proper outdoor education. Approximately a third indicated that it met the criteria for moderate suitability and only 3.2% thought that it was highly suitable. Strikingly, none of the respondents rated the space as very highly suitable. Therefore, it can be concluded that most of the teachers had a negative assessment of the characteristics of the outdoor space of their school.

This assessment was also reflected in the words that the teachers used to describe the outdoor space of their school, since many of them defined it as a space that caused people to feel cold, uncomfortable, stressed or overwhelmed. The following is a representative comment from a teacher: 'For many students, it's a gray space, without trees, without anything green, some of them spend the time wandering around doing nothing, there are a lot of conflicts.' They also stated that one of the reasons why people felt so uncomfortable was the organization of the outdoor space to accommodate the practice of mass sports 'because the central area is taken over by those who play soccer and the rest of us are crowded into the corners.' Along these lines, many teachers cited the lack of suitability of the outdoor space: 'it's not suitable, it does not offer opportunities for play or for co-education. It is not a learning space' and, in addition, 'the soccer pitch and basketball court leave no room for anything else and it's small.'

Regarding their assessment of how to constitute an outdoor space that would meet better criteria to implement a proper outdoor education, mainly they emphasized greater contact with nature and/ or better zoning of the spaces: 'We need less gray and more green, trees, spaces for the littlest students to experiment with stones, soil, sand. . .' Another option pointed out was to reallocate the space: 'if the area for sports were limited, swings or benches could be added.'

Finally, some teachers indicated that, to promote outdoor education, it is not enough to simply make improvements on the spaces, but better teacher training must also be achieved, and for that purpose, they considered more training in this area to be key.

Assessment of the functions of the school outdoor space. With regard to the perception of teachers that outdoor education favors cognitive and academic development, it should be noted that, although the majority of teachers (77.4%) indicated that they believe that the outdoor space is a school space that favors learning, a notable percentage did not agree with either this statement (22.6%) or with the assertion that the outdoor space supports the students' ability to maintain attention in their learning processes (19%). However, there was great consensus in believing outdoor education to be a factor that benefits academic results (86.7%) and promotes experimentation (100%). It should be noted that the teachers surveyed gave a positive assessment of outdoor education for student socio-emotional development. In fact, there was total consensus that playground time is a very important time for the promotion of social relationships. Likewise, there was total agreement in believing that the school outdoor space favors the well-being and emotional health of the students; in fact, the teaching staff also agreed on the need to furnish the outdoor space with opportunities for play and social interaction. However, when considering whether risky play should be encouraged, there were certain discrepancies: 57.1% agreed that risky play activities should be included, while the remaining 42.9% disagreed.

Finally, it should be noted that there was unanimity among teachers in considering the school outdoor space to be an appropriate educational space in which to work on co-education in order to create a more inclusive school.

The role of teachers and assessment of the functions of the school outdoor space

With regard to the role that the teacher has to play in the school outdoor space, greater heterogeneity was found. The majority (75.4%) expressed their belief that their role should be limited mainly to being an observer of student interaction, although without excluding interaction with students (98.3%). In relation to this, the majority (59%) do not consider it appropriate to suggest activities or try to activate all students on the

playground (71%). It should be noted that half of the teaching staff considered supporting conflict resolution to be one of their main roles in outdoor education, while the rest did not agree with this role.

[Tables 4 and 5](#) show the means, standard deviations, statistical significance and effect size associated with the mean difference between scores in Learning and Cognitive Development and those in Socio-emotional Development, based on the role of teachers.

Table 4. Differences in learning and cognitive development based on the role of the teaching staff.

Role of teaching staff	<i>M</i>	<i>SD</i>	<i>p</i>	<i>d</i>	<i>N</i>
Lesser role of observer	22.00	4.22	.033	0.68	14
Greater role of observer	24.00	3.22			42
Less propositional	23.44	4.15	.585	0.15	25
More propositional	23.97	3.12			32
Less involved in conflict management	23.41	4.23	.548	0.16	29
More involved in conflict management	24.00	2.83			27
Less aimed at promoting student activity	24.19	3.62	.558	0.17	16
More aimed at promoting student activity	23.56	3.60			41

N.B.: The variable ‘More or less directed at interacting with students’ had insufficient cases for comparison in one of the groups.

Table 5. Differences in socio-emotional development based on the role of the teaching staff.

Role of teaching staff	<i>M</i>	<i>SD</i>	<i>p</i>	<i>d</i>	<i>N</i>
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Lesser role of observer	46.62	6.32	.0009	0.86	13
Greater role of observer	50.80	4.26			39
Less propositional	48.13	5.99	.065	0.52	23
More propositional	50.77	4.17			30
Less involved in conflict management	49.35	5.85	.752	0.09	26
More involved in conflict management	49.81	4.56			26
Less aimed at promoting student activity	51.53	5.01	.090	0.53	15
More aimed at promoting student activity	48.87	5.08			38

N.B.: The variable ‘More or less directed at interacting with students’ had insufficient cases for comparison in one of the groups.

As can be seen, teachers who adopt a greater role of observer believe that education in the school outdoor space is more closely connected with learning and cognitive development ($t(54) = -2,189$; $p = .033$; $d = 0.68$). No statistically significant differences were found in the rest of the variables and the effect sizes associated with the mean differences were small.

As can be seen in [Table 5](#), with regard to socio-emotional development, statistically significant differences were found between the group of teachers who adopt a greater role of observer and those who take on a lesser role of observer ($t(50) = -2,698$; $p = .009$; $d = 0.86$). No statistically significant differences were found in the rest of the variables. However, in the more propositional group and in the group more aimed at promoting student activity, the effect size associated with the mean differences was of moderate magnitude. This suggests that propositional teachers, as opposed to non-propositional teachers, believe that education in outdoor spaces is associated with greater socio-emotional development. Likewise, teachers who were less aimed at

promoting student activity in the classroom, compared to those who showed a greater preference for promoting such activity, expressed a greater belief that education in outdoor spaces enhances socio-emotional development.

Discussion

The main objective of this study was to examine the perceptions of students and teachers about their outdoor experience on traditional playgrounds. Regarding the students, the obtained results clearly show their dissatisfaction with their outdoor experience at school. Specifically, the students criticized the lack of resources and the organization of the school outdoor space, alluding to the allocation of the space almost exclusively to sports, without additional resources or sufficient space for other activities. From this lack of materials or resources for play it can be deduced that this asphalted space lacking any contact with nature and with a sports-oriented design is far from being considered a ‘friendly’ space for students (Broberg et al., [2013](#); Jansson et al., [2016](#); Muela et al., [2019](#)). To be considered ‘friendly,’ according to various experts (Miranda et al., [2017](#); Prieske et al., [2015](#)), it should be possible for the outdoor experience to take place in spaces that offer students opportunities to move around, play, interact and face risks and challenges in close contact with nature (Miranda et al., [2017](#); Prieske et al., [2015](#)). Indeed, the students themselves, intuitively, proposed measures focused on turning the school outdoor space into a ‘friendly’ space, since they requested both natural elements and other resources that could test their motor skills and thus promote their ability to cope with challenges and risks. Likewise, some of the students requested a greater pedagogical use of the outdoor areas, in line with what is done in Nordic countries where outdoor education is considered very useful to complete curricular objectives (Remmen & Iversen, [2022](#)) and thus promote the well-being, learning and overall development of students (Miranda et al., [2017](#); Norðdahl & Jóhannesson, [2015](#)). In any case, it would be worthwhile to examine whether a more pedagogical use of outdoor space with educational initiatives supported by teachers would be well received by students. After all, the outdoor experience is

generally associated with recreational activities not directed by adults, so a use focused on more academic curricular aspects would require an adaptation process. Likewise, it would be necessary to analyze the response of the students in our area to a more extensive use of outdoor spaces in different meteorological conditions, since today the outdoor experience is limited to days without rain and with temperatures between 10 and 25 degrees Celsius.

With regard to the perceptions of the teaching staff, in agreement with the perspective of the students, most of the teachers had a negative assessment of the characteristics of their school's outdoor space. Furthermore, it should be noted that, while the students criticized the lack of resources and the organization of the space to accommodate the practice of majority sports (soccer, etc.), the teachers, in addition to that, expressed their negative feelings about the landscape of the outdoor space, describing it as 'cold,' 'uncomfortable' and 'stressful.' This may suggest that teachers not only perceive the importance of making changes at the structural level (better organization of spaces, appropriate equipment, avoiding playgrounds focused on sports practice, greater contact with nature, reducing paved areas, etc.), but also express their need for such changes to adapt to a harmonious relationship with the surrounding environment of interaction. This, in our view, is linked to the importance of promoting environmental education in schools. UNESCO (2021) has made it a requirement that education for sustainable development be a central component of education systems at all levels by 2025. This requires a holistic pedagogy that goes beyond the exclusive cognitive knowledge approach and that aims to involve students socially and emotionally, as well as in action- and participation-oriented learning (UNESCO, 2021).

One of the key points drawn from this study is that most teachers believe that student interaction in the school outdoor space is beneficial for learning and for their socio-emotional development, a notion that has been endorsed by a significant body of research (London, 2019). However, it should be noted that among the teaching staff, there were discrepancies in their opinion of whether the outdoor space should offer students the opportunity to face small challenges. This finding highlights the differences in the assessments of the students and of some of the

teaching staff, since the students specifically suggested that improvements in the use of the outdoor space should be based on a greater number of materials that would allow them, among other things, to face challenges and risks. Consistently with other authors (Muela et al., [2019](#); Sando & Sandseter, [2022](#)), this finding recommends the promotion of child participation and joint reflection on educational spaces. We believe that the commitment to listen to students and take them into account as subjects with rights, a voice and the capacity for participation and social interaction (Leonard, [2016](#)) offers them the opportunity to grow as individuals in interaction with their peers (De Sousa et al., [2019](#)), and can contribute to change processes that give greater weight in the curriculum to the open-air experience (Miranda et al., [2017](#); Oberle et al., [2021](#)).

Another important contribution of this study is the perception of teachers about the role they have to play in the school outdoor space. It should be noted that most felt that their role should be limited primarily to being an observer of student interaction. In addition, differences were found between teachers who had a less directive vision and those who were in favor of adopting a more interventionist view on the playground. In fact, the former believed that a more observational stance in the school outdoor space would better favor the learning and socio-emotional development of the students.

Since a large majority of teachers considered it key to receive more training on the use of the school outdoor space as an educational space, we believe that these differences may have implications with respect to the type of training that would have to be offered. Given that the role of teachers is key in being able to turn outdoor experiences into intentional practices (Larsson & Rönnlund, [2021](#); Tuuling et al., [2019](#)), one practical implication of the present study may be to promote training activities both in schools, for teachers, and in universities, for future teachers. We believe that training, among other things, must be aimed at mitigating the lack of a comprehensive understanding of the benefits of outdoor education (Tuuling et al., [2019](#)). Likewise, it is recommended that the training plan include work on being open to different teaching and learning methods, positive attitudes toward the environment, familiarity with ecological concepts, and the recognition that there is

evidence of positive academic results, all of which are associated with a greater receptiveness to experiences outside the classroom (Lane et al., [2018](#)). In order not to hinder risky and challenging play, the beliefs of teachers regarding risk management must also be worked on (Jerebine et al., [2022](#); Prince, [2018](#)). Along these lines, it could be of particular interest if members of the teaching staff have life experience in outdoor spaces and are able to analyze that experience in a research-action context. Reflection on practice can help teachers to identify both the benefits and the potential obstacles of an enriching outdoor experience (Neville et al., [2021](#)).

Limitations and future directions

With regard to the limitations of the present study and implications for future work, first of all, it should be noted that this is a case study limited to an educational center that had a traditional playground. In order to achieve greater external validity of the perceptions of students and teachers, future research should include a greater number of schools, professionals and students. With regard to the evaluation of the various aspects of child development, it should be noted that, in the present work, we did not examine the teachers' perceptions of the students' psychomotor development. Therefore, future studies should include measuring tools that evaluate this variable in the school outdoor space. Finally, the practical application of this study goes hand in hand with the development of projects that stem from the perceptions of the students and teachers herein, and that seek to modify school outdoor spaces. Thus, the impact of those modifications on the perceptions of both students and teachers could be evaluated.

Conclusions

Outdoor education is an educational resource to promote student well-being, learning and socio-emotional development; however, its use is not very widespread and has not yet been sufficiently developed. In the present study, this idea is confirmed since both the students and teachers examined expressed their dissatisfaction with the outdoor experience at

their school. They cite the lack of materials, unsuitable organization of space, excessive paving and little contact with nature. On the contrary, the outdoor experience should take place in spaces that offer students opportunities to move around, play, interact and face adventures and challenges in close contact with nature. In line with this, the educational use of school outdoor spaces can promote environmental education, as it provides an ideal scenario for the application of transformative learning approaches. In order for this to happen, it is considered key to enhance the role of teachers to one of a more observational and less interventionist nature, sufficiently prepared to support healthy and inclusive play, but at the same time far from a role whose exclusive function is to ensure the safety of students.

Disclosure statement

No potential conflict of interest was reported by the authors.




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References

Artola, M., Larrea, I., & Barandiaran, A. (2017). Berrikuntza Haur Hezkuntzako kanpo espazioan: diseinuaren kalitatea eta haurren jolasa [Innovation in Early Childhood Education Centres' outdoor spaces: quality of the design and children's play]. *Tantak: EHU Hezkuntza Aldizkaria*, 29(1), 123–146. <https://doi.org/10.1387/tantak.17868>

Bølling, M., Otte, C. R., Elsborg, P., Nielsen, G., & Bentsen, P. (2018). The association between education outside the classroom and students' school motivation: Results from a one-school-year quasi-experiment. *International Journal of Educational Research*, 89, 22–35. <https://doi.org/10.1016/j.ijer.2018.03.004>

- Broberg, A., Kyttä, M., & Fagerholm, N. (2013). Child-friendly urban structures: Bullerby revisited. *Journal of Environmental Psychology*, 35, 110–120. <https://doi.org/10.1016/j.jenvp.2013.06.001>
- De Lannoy, L., Rhodes, R. E., Moore, S. A., Faulkner, G., & Tremblay, M. S. (2020). Regional differences in access to the outdoors and outdoor play of Canadian children and youth during the COVID-19 outbreak. *Canadian Journal of Public Health*, 111(6), 988–994. <https://doi.org/10.17269/s41997-020-00412-4>
- De Sousa, J., Loizou, E., & Fochi, P. (2019). Participatory pedagogies: Instituting children's rights in day to day pedagogic development. *European Early Childhood Education Research Journal*, 27(4), 299–304. <https://doi.org/10.1080/1350293X.2019.1608116>
- Gray, C., Gibbons, R., Larouche, R., Sandseter, E. B., Bienenstock, A., Brussoni, M., Chabot, G., Herrington, S., Janssen, I., Pickett, W., Power, M., Stanger, N., Sampson, 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>
- Jansson, M., Sundevall, E., & Wales, M. (2016). The role of green spaces and their management in a child-friendly urban village. *Urban Forestry & Urban Greening*, 18, 228–236. <https://doi.org/10.1016/j.ufug.2016.06.014>
- Jerebine, A., Fitton Davies, K., Lander, N., Eyre, E. L., Duncan, M. J., & Barnett, L. M. (2022). “All the fun stuff, the teachers say, ‘that’s dangerous!’” Hearing from children on safety and risk in active play in schools: A systematic review. *The International Journal of Behavioral Nutrition and Physical Activity*, 19(1), 1–25. <https://doi.org/10.1186/s12966-022-01305-0>
- Lane, J., Ateşkan, A., & Dulun, Ö. (2018). Turkish teachers' use of the outdoors as a teaching resource: Perceived facilitators and obstacles. *Applied Environmental Education & Communication*, 17(1), 14–28. <https://doi.org/10.1080/1533015x.2017.1348272>
- Largo-Wight, E., Guardino, C., Wludyka, P., Hall, K., Wight, J., & Merten, J. (2018). Nature contact at school: The impact of an outdoor classroom on children's well-being. *International Journal of Environmental Health Research*, 28(6), 653–666. <https://doi.org/10.1080/09603123.2018.1502415>
- Larrea, I., Muela, A., Miranda, N., & Barandiaran, A. (2019). Children's social play and affordance availability in preschool outdoor environments. *European Early Childhood Education Research Journal*, 27(2), 185–194. <https://doi.org/10.1080/1350293X.2019.1579546>
- Larsson, A., & Rönnlund, M. (2021). The spatial practice of the schoolyard. A comparison between Swedish and French teachers' and principals' perception of educational outdoor spaces. *Journal of Adventure Education & Outdoor Learning*, 21(2), 139–150. <https://doi.org/10.1080/14729679.2020.1755704>
- Leonard, M. (2016). *The sociology of children, childhood and generation*. Sage.

- London, R. A. (2019). *Rethinking recess: Creating safe and inclusive playtime for all children in school*. Harvard Education Press.
- Mann, J., Gray, T., Truong, S., Sahlberg, P., Bentsen, P., Passy, R., Ho, S., Ward, K., & Cowper, R. A. (2021). Systematic review protocol to identify the key benefits and efficacy of nature-based learning in outdoor educational settings. *International Journal of Environmental Research and Public Health*, 18(3), 1199. <https://doi.org/10.3390/ijerph18031199>
- Marchant, E., Todd, C., Cooksey, R., Dredge, S., Jones, H., Reynolds, D., Stratton, G., Dwyer, R., & Lyons, R., Brophy, S. (2019). Curriculum-based outdoor learning for children aged 9-11: A qualitative analysis of pupils' and teachers' views. *Plos One*, 14(5), e0212242. <https://doi.org/10.1371/journal.pone.0212242>
- Maynard, T., Waters, J., & Clement, J. (2013). Moving outdoors: Further explorations of 'child-initiated' learning in the outdoor environment. *Education 3-13 education 3-13*, 41(3), 282–299. <https://doi.org/10.1080/03004279.2011.578750>
- McClintic, S., & Petty, K. (2015). Exploring early childhood teachers' beliefs and practices about preschool outdoor play: A qualitative study. *Journal of Early Childhood Teacher Education*, 36(1), 24–43. <https://doi.org/10.1080/10901027.2014.997844>
- Miranda, N., Larrea, I., Muela, A., & Barandiaran, A. (2017). Preschool children's social play and involvement in the outdoor environment. *Early Education and Development*, 28(5), 525–540. <https://doi.org/10.1080/10409289.2016.1250550>
- Muela, A., Larrea, I., Miranda, N., & Barandiaran, A. (2019). Improving the quality of preschool outdoor environments: Getting children involved. *European Early Childhood Education Research Journal*, 27(3), 385–396. <https://doi.org/10.1080/1350293X.2019.1600808>
- Neuendorf, K. A. (2017). *The content analysis guidebook*. SAGE.
- Neville, I., Petrass, L., & Ben, F. (2021). The impact of an outdoor learning experience on the development of English creative writing skills: An action research case study of year 7 and 8 secondary school students in Australia. *Journal of Adventure Education & Outdoor Learning*, 1–14. <https://doi.org/10.1080/14729679.2021.1983445>
- Norðdahl, K., & Jóhannesson, I. Á. (2015). Children's outdoor environment in Icelandic educational policy. *Scandinavian Journal of Educational Research*, 59(1), 1–23. <https://doi.org/10.1080/00313831.2013.821091>
- Oberle, O., Zeni, M., Munday, F., & Brussoni, M. (2021). Support factors and barriers for outdoor learning in elementary schools: A systemic perspective. *American Journal of Health Education*, 52(5), 251–265. <https://doi.org/10.1080/19325037.2021.1955232>
- Prieske, B., Withagen, R., Smith, J., & Zaal, F. T. J. M. (2015). Affordances in a simple playscape: Are children attracted to challenging affordances? *Journal of Environmental Psychology*, 41, 101–111. <https://doi.org/10.1016/j.jenvp.2014.11.011>
- Prince, H. (2018). Changes in outdoor learning in primary schools in England, 1995 and 2017: Lessons for good practice. *Journal of Adventure Education & Outdoor Learning*, 19(4),

329–342. <https://doi.org/10.1080/14729679.2018.1548363> Remmen, K. B., & Iversen, E. (2022). A scoping review of research on school-based outdoor education in the Nordic countries. *Journal of Adventure Education & Outdoor Learning*, 1–19.

<https://doi.org/10.1080/14729679.2022.2027796> Rowe, B., Canosa, A., Drouffe, J., & Mitchell, J. (2021). Simple quantitative assessment of the outdoor versus indoor airborne transmission of viruses and COVID-19. *Environmental Research*, 198, 111189. <https://doi.org/10.1016/j.envres.2021.111189>

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334:AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334:AID-NUR9>3.0.CO;2-G)

Sando, O., & Sandseter, E. (2022). Children’s perception and utilization of ECEC physical environments. *Education Sciences*, 12(2), 88. <https://doi.org/10.3390/educsci12020088>

Sandseter, E., Kleppe, R., & Sando, O. (2021). The prevalence of risky play in young children’s indoor and outdoor free play. *Early Childhood Education Journal*, 49(2), 303–312. <https://doi.org/10.1007/s10643-020-01074-0>

Storli, R., & Sandseter, E. B. H. (2019). Children’s play, well-being and involvement: How children play indoors and outdoors in Norwegian early childhood education and care institutions. *International Journal of Play*, 8(1), 65–78. <https://doi.org/10.1080/21594937.2019.1580338>

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

Tuuling, L., Oun, T., & Ugaste, A. (2019). Teachers’ opinions on utilizing outdoor learning in the preschools of Estonia. *Journal of Adventure Education & Outdoor Learning*, 19(4), 358–370. <https://doi.org/10.1080/14729679.2018.1553722>

Ulset, V., Vitaro, F., Brendgen, M., Bekkhus, M., & Borge, A. (2017). Time spent outdoors during preschool: Links with children’s cognitive and behavioral development. *Journal of Environmental Psychology*, 52, 69–80. <https://doi.org/10.1016/j.jenvp.2017.05.007>

UNESCO. (2021). *Learn for our planet: A global review of how environmental issues are integrated in education*. UNESCO. United Nations. (1989). *Convention on the rights of the child. Treaty series, 1577*. United Nations.

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations.

van Rooijen, M., Lensvelt-Mulders, G., Wyver, S., & Duyndam, J. (2019). Professional attitudes towards children’s risk-taking in play: Insights into influencing factors in Dutch contexts. *Journal of Adventure Education & Outdoor Learning*, 20(2), 138–154. <https://doi.org/10.1080/14729679.2019.1568893>

Veiga, G., de Leng, W., Cachucho, R., Ketelaar, L., Kok, J. N., Knobbe, A., Neto, C., & Rieffe, C. Social competence at the playground: Preschoolers during recess. (2017). *Infant and Child Development*, 26(1), e1957. Article e1957. <https://doi.org/10.1002/icd.1957>

Waite, S. (2011). Teaching and learning outside the classroom: Personal values, alternative pedagogies and standards.

Education 3-13 education 3-13, 39(1), 65–82. <https://doi.org/10.1080/03004270903206141>

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.