REORGANISING SCHOOLING TIME: PHYSICAL ACTIVITY A BRIDGE FOR OUTDOOR LEARNING

RIORGANIZZARE IL TEMPO DEL FARE SCUOLA: L'ATTIVITÀ MOTORIA UN PONTE PER L'OUTDOOR LEARNING

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ABSTRACT
The combination of green space - physical and mental condition promotes physical and social well-being (Bonaiuto et al., 2022). This condition is capable of influencing cognitive development from an early age, so formal contexts, such as the educational institution, must necessarily act and ensure adequate educational action. The association between the use of green space and cognitive development must necessarily involve the use of the body as an educative medium (Ceciliani, 2019).
The educational and formative value of the body is now recognized in Italian primary schools (Bortolotti, Ceciliani, 2010). Law no. 234 of 2021 gives greater value to physical education in primary school as the figure of the graduate teacher specialized in motor activity is recognized.

Il binomio spazio verde - condizione fisica e mentale promuovere il benessere fisico e sociale (Bonaiuto et al., 2022). Tale condizione è in grado di influenzare lo sviluppo cognitivo sin da bambini, pertanto i contesti formali, come l'istituzione scolastica, devono necessariamente agire e garantire un'adeguata azione formativa. L'associazione tra l'utilizzo dello spazio verde e lo sviluppo cognitivo deve necessariamente implicare l'utilizzo del corpo come mezzo educante (Ceciliani, 2019).
Il valore educativo e formativo del corpo è ormai riconosciuto nella scuola primaria italiana (Bortolotti, Ceciliani, 2010). Con la Legge n. 234 del 2021 si dà infatti maggiore valore all'educazione motoria nella scuola primaria in quanto si riconosce la figura dell'insegnate laureato e specializzato in attività motoria.

KEYWORDS
Schhola, green spaces, cognitive development, learning environment,

Scuola, spazi verdi, sviluppo cognitivo, ambiente di apprendimento,

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1. Introduction

Goal number four of Agenda 2030 states that it is necessary to provide quality, equitable and inclusive education for pupils so that learning opportunities for all can be fostered (Capobianco, 2021). Quality education is the basis for improving people's lives and achieving sustainable development.
Body, movement and play have a fundamental role in building a child's personality (Fortunati, 2006).
In the past, children had more opportunities to use outdoor space to play naturally with or without the presence of an adult figure. With increasing urbanisation, outdoor spaces have diminished, so children's playful movement has also been reduced, negatively affecting their identity growth and psycho-social conditions.
The presence of green spaces where the child-pupil can play or carry out an educational activity has proved useful, so much so that in recent years in various European countries, initiatives and projects have sprung up whose aim is to encourage people to re-appropriate public space (Fortunato, 2022).
In the concept of school learning environment, space encompasses both indoor and outdoor space, as these are to be considered as complementary places for the development of educational proposals. Therefore, educational institutions in their educational planning must consider the pedagogically oriented use of outdoor spaces (Lodi, 2022).
Outdoor spaces structured and oriented according to pedagogical indications allow the learner to have learning experiences that generate significant improvements in cognitive performance, as well as in interpersonal, social and affective skills (Bortolotti, Bosello, 2020).
This work aims to highlight how important it is in the school environment for pupils to use any space for learning. It also shows how the presence of motor education in the primary school is a subject with cross-curricular and interdisciplinary potential that can positively influence the acquisition of new knowledge by learners in association with green spaces outside the school.

2. Body's educative value

The body and movement, in the context of education, represent an educational modality to be explored and utilised, as it can offer a purpose not only related to physical exercise or playfulness, but also educational and social (Roghi, 2022).

Motor activity has the capacity to enhance various peculiarities of the person practising it. It succeeds in arousing value and human attitudes implicit in everyone naturally (Bortolotti, 2016).
Recognising the educational component of the body is equivalent to giving equal value to movement (Belgianni, 2017), which, when practised in formal contexts such as primary school, is recognised as a discipline of motor education.
The body, and consequently motor education, retain in them a great educational potential capable of making the motor experience rich and varied with new forms and knowledge (Rosa, De Vita, 2018).
The conception of the body in movement as only necessary for a culture and physical fitness is now obsolete, as socio-emotional, cognitive and relational values have been recognised in it, and for this reason it is also necessary in formal contexts. With it, it is possible to promote a new way of teaching, equipped with innovative tools and methodologies that can be used for the learner's learning (Casolo, 2019).
When thinking about movement and motor activity, it is important to believe that they are the foundation of everyone's daily life, which is why they must be used to their full potential regardless of the educational context in which the child interacts (Lodi, 2023). In this way, planned movement becomes educational, as it is proposed by a teacher who uses his or her skills to create a learning environment that is suitable for the particularities of each learner (Voloshina, et al., 2019). The didactic proposal must take place through playful movement, so that the practical experience is able to positively influence the learner's learning process, as it is also able to exploit other aspects such as socialisation with others (Komatni, 2022). In this way, an educational culture of movement is built, with which the learner acts and interacts in all educational contexts, thus creating a transversal motor competence.
The body and motor activity must be the pivotal point of the entire learning process, as they act as a means of acting on the cognitive and socio-relational axis without negatively influencing the learner (Sopa, 2014). In this sense, the pupil becomes the protagonist of the learning process that takes place learning by doing, and it is for this reason that the body and movement act as an educational and formative guide.

3. Educational spaces at school

School educational spaces are intended to describe any place present inside and outside the school, whose function is also a learning environment. Therefore, they

represent a wide range of pedagogical experiences that each learner can try out, and above all experience in an active and participative way (Cagol, Dozza, 2022).
The classical approach of teaching spaces in the school context is now obsolete, as it reflects a design of the environment calibrated to the needs of the teacher's work as a source of knowledge transmission (Lo Feudo, 2021). With this view, the task of the learners is exclusively to be able to learn passively. The focal point for understanding this view is the teacher's desk, which is and must be understood by the pupils as the command pole. This conformation of spaces succeeds in giving a role of primary importance to the teacher, understood as the centre of the teaching-learning process.
Nowadays, this view of spaces and of the way of being a teacher has radically changed (Carr, Palmer, Hagel, 2015), and consequently the way of thinking and seeing the surrounding spaces has also changed. They are considered a fundamental component of school activities, as they contribute to defining the varied and multidimensional character of educational situations. From the way in which the teacher thinks, prepares and organises the spaces before, during and after his or her teaching proposal, it is possible to understand what methodology he or she intends to use. Such a pedagogical experience must be characterised by:
- interdisciplinarity;
- interpersonal relations;
- ecosystem relations;
- ekistic relations.

Ultimately, when using the term space, one should not only think of the literary sense of the term but also of the proxemics of the teaching action (Damiano, 2013). A properly prepared educational environment necessarily considers spaces and times of learning, so that they are given the right formative value, and not considered a mere outline of the teaching process. In this way, it will be possible to teach pupils skills and not a vast quantity of notions, so that they can be used in any context, precisely because they derive from meaningful educational experiences (Lucisano, 2013). Therefore, spaces must present characteristics of flexibility and individuality that allow each pupil to use his or her own knowledge and abilities to learn (Zuccoli, 2023). And it is for this reason that space does not necessarily have to be confined to the classroom, but any place that can stimulate and foster the pupil's learning moment can also be used.
The individual-nature relationship generates positive effects in terms of both health and psychology, increases the perception of well-being and positive emotions, and thus promotes the activity of cognitive functions. Therefore, the configuration of

educational-didactic spaces in natural outdoor environments is very important, as they involve the pupil as a whole (Guyotte, et al., 2015).
This approach complies with the 2030 Agenda, as it is closely linked to environmental education and education for sustainable development. It is characterised by a multi-disciplinary approach with the aim of creating a lasting link between pupils and their community through the acquisition of skills capable of making them reflect and address local problems by contextualising them globally.

4. Research project's description

This study involves a primary school in the Apulia Region in the province of Bari. It was conducted in the school year 2022/2023 on 93 pupils in four fifth classes, aged between 9 and 10 years, whose social background is heterogeneous.
An experimental group (47 pupils) and a control group (46 pupils) were recruited to check for any school-wide effects. The latter benefited from the same teaching methods but were not allowed to use the green spaces during school lessons. It should be pointed out that the four classes were offered a type of didactics based on motor education in an interdisciplinary and transversal sense, so any teacher of any discipline could use the body and movement in the green spaces to achieve the set didactic objective.

Experimental Group			Control Group		
Class	N. Students	Age	Class	N. Students	Age
A	23	9 – 10 years	C	24	9 – 10 years
B	24	9 – 10 years	D	22	9 – 10 years

Tabe 1: Experimental and control group's students data

The aim of this work is to demonstrate how the influence of green spaces can affect the teaching-learning process. To this end, in order to assess the cognitive aspect, it was decided to check the changes in memory and attention by using three cognitive tests, each consisting of 20 closed-ended questions relating to the topics covered. They were administered to the learners on a quarterly basis in the four classes examined and had a time limit of 60 minutes.
In order to ensure the successful implementation of the project, all teachers who are members of the class council of their respective classes were involved, and they

were tasked with finding out how much the motor education used in outdoor spaces affected the pupils' learning and attention.
To assess the learners' attention and degree of participation, the teachers were given a table whose value varies from 1, which is equivalent to non-attention and non-participation in the proposed activity, to 5, which represents full attention and participation during the lesson. The quarterly and final assessment is derived from an average of the assessments made by the teachers according to the scheme in Table 2.
The teachers must assess the grade achieved by the students each term both by means of tests and from the observations concerning the degree of attention and participation of the learners (Table 2).
As far as the three tests are concerned, each one is made up of 20 questions and concerns the learning phase, so the assessment from 1 to 5 in Table 2 derives from a first average from the single test, and a second average determined from the three tests.

Attention and participation assessment					
Full pupil participation and attention					5
Good pupil participation and attention					4
Low pupil participation and attention					3
Poor pupil participation and attention					2
Lack of pupil participation and attention					1
Learning assessment					
First Test	**Second Test**		**Third Test**		
0 to 4 correct answers = 1	0 to 4 correct answers = 1		0 to 4 correct answers = 1		
5 to 8 correct answers = 2	5 to 8 correct answers = 2		5 to 8 correct answers = 2		
9 to 12 correct answers = 3	9 to 12 correct answers = 3		9 to 12 correct answers = 3		
13 to 16 correct answers = 4	13 to 16 correct answers = 4		13 to 16 correct answers = 4		
17 to 20 correct answers = 5	17 to 20 correct answers = 5		17 to 20 correct answers = 5		
Mean Test =	Mean Test =		Mean Test =		
Second mean derived from the mean of the three Tests =					
First quarter = September - October - November					
Aspects observed by teachers	**Evaluation resulting from the mean of tests and observations**				
Learning	1	2	3	4	5

Attention and participation	1	2	3	4	5
Second quarter = December - January - February					
Aspects observed by teachers	**Evaluation resulting from the mean of tests and observations**				
Learning	1	2	3	4	5
Attention and participation	1	2	3	4	5
Third quarter = March - April - May					
Aspects observed by teachers	**Evaluation resulting from the mean of tests and observations**				
Learning	1	2	3	4	5
Attention and participation	1	2	3	4	5

Table 2: Parameters and mean obtained by teachers

The data collected from the research showed how the positive influence of green space in association with motor education can affect the cognitive development of pupils. An improvement in attention and working memory was found in the experimental group, highlighting how the association between exposure to green space and cognitive development among pupils is conducive to unique educational experiences that promote motivation, discovery and creativity in the learner.

	Evaluation Learning					
	First Quarter	**Second Quarter**	**I**	**Third Quarter**	**I**	**Improvements (I) Total**
Experimental Group	6 students = 1	4 students = 1	-2	2 students = 1	-2	-4
	17 students = 2	13 students = 2	-4	8 students = 2	-5	-9
	17 students = 3	18 students = 3	+1	14 students = 3	-4	-3
	5 students = 4	9 students = 4	+4	17 students = 4	+8	+12
	2 students = 5	3 students = 5	+1	7 students = 5	+4	+5
Control Group	5 students = 1	5 students = 1	0	4 students = 1	-1	-1
	15 students = 2	13 students = 2	-2	11 students = 2	-2	-4
	19 students = 3	18 students = 3	-1	19 students = 3	+1	0

	6 students = 4	8 students = 4	+2	10 students = 4	+2	+4
	1 student = 5	2 students = 5	+1	2 students = 5	0	+1

Table 3: Evaluation of teacher-recorded learning

Analysing in detail the data obtained concerning the assessment of learning with respect to the survey of the first term, a substantial improvement is observed in the experimental group compared to the control group. In particular, examining only the improvements, four pupils in the experimental group changed (M = Improvement) their grade one assessment, nine their grade two assessment, and three pupils improved their grade three assessment. In addition, twelve pupils, compared to the beginning of the school year, achieved an assessment of four, and five gained grade five.

In the control group, not all of these improvements were recorded; in fact, compared to the assessment in the first term, only one pupil improved his initial grade one assessment, four improved their grade two assessment, none improved their grade three assessment, four improved their grade four assessment, and only one achieved a grade five assessment.

	Attention and Participation Evaluation					
	First Quarter	**Second Quarter**	**I**	**Third Quarter**	**I**	**Improvements (I) Total**
Experimental Group	18 students = 1	13 students = 1	-5	5 students = 1	-8	-13
	15 students = 2	14 students = 2	-1	6 students = 2	-8	-9
	7 students = 3	12 students = 3	+5	14 students = 3	+2	+7
	5 students = 4	6 students = 4	+1	15 students = 4	+9	+10
	2 students = 5	2 students = 5	0	7 students = 5	+5	+5
Control Group	17 students = 1	14 students = 1	-3	9 students = 1	-5	-8
	16 students = 2	13 students = 2	-3	8 students = 2	-5	-8

	10 students = 3	13 students = 3	+3	18 students = 3	+5	+8
	2 students = 4	4 students = 4	+2	8 students = 4	+4	+6
	1 student = 5	2 students = 5	+1	3 students = 5	+1	+2

Table 4: Evaluation of attention and participation noted by teachers

Analysing the data obtained concerning the assessment of attention and participation in comparison to the survey in the first term, a predominance of the experimental group over the control group can also be observed here. In particular, thirteen four pupils in the experimental group changed their assessment to one, nine to two, seven pupils improved their assessment to grade three, ten pupils achieved an assessment of four and five gained grade five.

In the control group, compared to the assessment in the first term, eight improved their initial assessment to grade one, as well as to grades two and three, six improved their assessment to grade four, and two achieved an assessment of five.

These data suggest that motor education and the interdisciplinary potential it possesses, associated with outdoor and not exclusively indoor practice, offers a significant contribution in simplifying the learning process, facilitating pupils' understanding of new knowledge. The body and educational play for pupils assume, in association with spaces outside the school, a privileged role as they are able to positively influence the quality of the teaching-learning process (Yıldırım, Akamca, 2017).

5. Conclusions

The primary school, must work for the correct construction of the pupil's identity (Crivellari, 2020), therefore it is necessary for all the actors involved in the teaching-learning process, to be adequately trained, but above all to be able to use any space present in the school institution, which is considered valid for educational purposes. With this important purpose in mind, the educational institution should rethink the spaces and times of educational activities so as not to limit opportunities for movement to moments in the gym. In this regard, green spaces produce a number of benefits for learning new knowledge in learners (Fallah Tafti, Mirjany Arjanan, 2021).

This study, based on the characterisation of green outdoor surroundings and the formative action of motor education as a discipline with interdisciplinary and transversal value, found an improvement in cognitive development associated with green surroundings. Therefore, the school's task is to propose didactic-educational interventions that enhance outdoor activity, so that each pupil can be put in the best possible conditions and succeed in building his or her self, understood as a pupil and future citizen.

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