

PEDAGOGY OF NATURE BETWEEN OUTDOOR EDUCATION AND SUSTAINABILITY¹

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Abstract

Outdoor education arises from the teacher training experience to school culture on the lawn. Often 3-10 years old children do not have direct contact with nature and are losing the value of being part of the natural environment. In postmodern societies virtual communication tends to be a substitute of human relations, education for sustainability considers the relevance of outdoor learning. Teacher education include direct experience in outdoor education to allow understanding the importance of living their pupils in outdoor learning as a first step towards education for environmental sustainability and active citizenship. Animals, plants and stones are the children's centers of interest but they are marginalized and reduced to virtual knowledge. Hence the image of transhumance, as migration from university to lawn and from lawn to school. The countryside offers green areas where it is possible to observe strength and beauty of nature. Outdoor learning experience recognizes traces of a common history from which scientific discoveries have become world heritage. Teachers in the open-air campus hall promote the pedagogical reconstruction of environments that in the past have represented a revolution in the concept of contemporary education, and in the present promise becomes fertile humus for the school regeneration. Experience of pedagogy of nature represents a vital moment of growing. The Meadow School project belongs to the field of the outdoor education studies. In its specific identity collected enthusiasm from teachers and students feeling school education without walls as the future of innovation and a real strategy intended to contrast the fragility of young people who are poor in several senses, economically and culturally speaking. The study confirms its validity and constitutes a true transformation of the way of teaching allowing the schools to open the door and explore the world with activities recognised as integral part of the curriculum.

Keywords

Education, Nature, outdoor learning, sustainability, active citizenship

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Introduction

Over the course of academic year 2018-2019, an initial exploratory inquiry was carried out in three Outdoor Schools. These three schools are municipal Nursery Schools located in District XIII of Rome:

1. Municipal Nursery School “Legno Verde” (former Padre Bernardino Mastroianni) in Via Ponzone 23, Casal Selce - Casalotti (Z.XLVIII) District XIII - Via Ponzone, 23 - 00166 Rome. Contact person and teacher Maria Carmela Romano.
2. Municipal Nursery School “Luna Sapiente” in Via Casalotti, 87 - 0166 Rome. Contact person and teacher Gabriella Bruno.
3. Municipal Nursery School “Vittorio Alfieri” - Section 1 - Aurelio (Q. XIII) Largo S. Pio V, 21 - 00165 Rome, at the elementary school “Vittorio Alfieri”. Reference contact and teacher Roberta De Horatis.

The request for scientific monitoring arrived at the University as a general commitment; that means not formalised from a point of view of scientific tasks for planning the path to be conceived to collect the results that could confirm the pedagogical and didactic validity of the *outdoor education* model.

During the first autumn meeting of 2018, in which representatives of the District, Schools, Associations and University participated, it was agreed that the lack of monitoring and evaluating the results obtained by Outdoor Education rendered the great works the teachers had been doing for years both disconnected and unmethodical. Work under the floodlights of multimedia dissemination and on the Net, but rather peripheral in the attention paid by the scientific community. The inquiry was carried out from September 2018 until June 2019 through the preparation of various data collection tools intended to monitor and present the results of some Schools of Outdoor Education. District XIII of Rome is an especially relevant zone from the standpoint of the commitment of teachers and parents, who, since 2014, have been fully sharing the educational model of *outdoor education* in differentiated forms of classroom and curriculum management in after school environments.

We are aware of the fact that there is a void to be filled regarding the results that *outdoor education* attains, thanks to the great teaching work of the teachers and commendable trust of the parents. We hope to follow up this initial reporting with further in-depth studies in order to begin to build up verifiable, reliable

documentation, although within the limits that often arise in the contingency of the commitments.

The scientific classification of the inquiry

The first step necessary to start up scientific monitoring of the new *outdoor education* model is represented by the Deed of Understanding dated 18 June 2018, with the purpose of the “Agreement as per Art. 15 of Law no. 241/1990 between District XIII Roma Aurelio and the Department of Sciences of Education, University of Studies Roma Tre, for sharing, promoting and disclosing the Outdoor Education Project in school structures standing in the municipal territory”. The institutional contact persons are Paola Biggio, Councillor for School Policies, School Buildings and Youth Policies, and Sandra Chistolini, full professor of general and social pedagogy.

What is compiled here concerns the scientific work agreed to, in a general form and in broad terms, by the District, teachers and University, through the reference persons. Let us keep in mind that what is built up during the university experience always has scientific research value and academic reporting. This specification is made necessary in reply to Article 3 of the Deed of Understanding and in reply to the requirement of District XIII to give results of the monitoring done at the exclusive responsibility of the University. The public presentation of the results is being scheduled by District XIII and foresees a special conference addressed to citizenship.

Accordingly, without prejudice to the provision in Article 3 of the Understanding concerning the privacy clause, the results, still partial and presented here in summary form, pertain to the monitoring, formalisation and conception of the data collection tools, and processing of the evaluations of the learning abilities as proof of the positivity of the *outdoor education* model. The methodology, data collection tools and contents of the scientific work are not provided for in the Understanding, but fall within the institutional tasks of study, research and training of university teachers, who have the ethical obligation to agree with their academic commitment, and are the production of institutional scientific work. Specifically, the scientific accompaniment of Outdoor Education, cited in the Deed of Understanding, was awarded to University Roma Tre without a budget, also as acknowledgement of the studies published in articles and essays that guide the various educational situations of *outdoor education*, within the broad issue known as *Pedagogia della natura* (Nature Study) (Cecchini 1910; Das 2007; Bortolotti 2011;

Schwarzer 2013; Hoskins, Smedley 2016; Schenetti, Salvaterra, Rossini 2015; Chistolini 2016; Emilio Manes, Bello, Casertano, Mai, Ronci 2016).

The necessity of District XIII to give scientific weight to the choice of school and social policy focussed on the new educational model and could not but positively involve University Roma Tre that has been working on this issue for years, including the promotion of conference and teacher-training projects. The latter represents one of the highest priorities of the Department of Sciences of Education, which accepted the request of District XIII regarding post-graduate training courses for teachers, this being within the aims of the *Terza Missione* (Third Mission) meant for the collaboration with institutions for cultural and social promotion, operating in the territory.

Sample of the schools selected

The schools that asked the University for monitoring through the District use the designation Outdoor Education, in two cases, and the designation Forest School, in one case. In total, the agreement was to study 7 sections, equivalent to 7 classes of children aged 3 to 5, with the participation of 7 teachers. All the teachers of the classes participating in outdoor education worked on the collection of data.

The *Outdoor School* 'Legno Verde' is scheduling the activity, starting from September, for the entire school composed of four sections, with children aged 3-4-5 in one section each and one mixed section with children aged 3-4-5 together. Legno Verde educates by taking the children to the 'Parco Natura VoloAlto' (an Educational Farm of the Onlus Association) that organises workshop activities and hosts children in a vast area with facilities and the presence of animals and plants.

Starting from September, the *Forest School* 'Luna Sapiente' is taking two sections of children, aged 4 and 5, to the Natural Monument of 'Parco della Cellulosa'-CREA - Committee for Research in Agriculture and the Analysis of Agrarian Economy, 'Foreste e Legno' Research Centre and collaborating with the *Legambiente* Onlus Association.

Starting from March, the *Outdoor School* "Vittorio Alfieri" is taking one section to the Regional Urban Park "Il Pineto", availing itself of the workshops made available by the Volo Alto Natural Park, which, for the occasion, is going to "Il Pineto", situated between District XIII and XIV of Rome, near the school.

Methodology

The inquiry is exploratory and makes use of a two-fold methodology of both a qualitative and quantitative nature, the reference basis being fields of experience at nursery and pre-schools, the methods that specify them and the response of children to the education being offered by teachers and educators. The response indicates the learning achieved three times during the survey: at the beginning of the process, halfway through the process and upon completion of the process.

For the qualitative part, the teachers related their findings, describing the longitudinal learning of the children (that is to say, over an academic year). The narrative of the culture of the school is associated with: the studies by Decroly on conditions that support the total integral growth of the child and appeals to create a school environment similar to nature, since the latter is more in keeping with the need for spontaneity and non-artificial behaviour of humankind (Decroly, Hamaïde, 1932, pp. 83-98); the studies by Bruner (1997; 2002) on the value of the creation of the identity and profound meaning contained in the personal experience narrated in an organised form and; the paradigm of the living pedagogy of Giuseppina Pizzigoni, disciples of the method (Chistolini 2009). Pizzigoni starts from the analysis of the life profile of the child. Thereafter, the teachers following the method made evaluation tests of the learning attained by means of detailed classifications of the behaviour of children at school, from which relevant suggestions were derived for improving their teaching.

For the quantitative part, we refer to the evaluative assignment of the narrations, with acknowledgment of the intensity of each child's response to the pedagogical and didactic offer of the teacher. The four levels of the measurement scale (i.e. A lot, Fair, Little, Nothing) refer to the feedback intensity (i.e. high, average, minimum, none) with respect to the activity carried out at various times during the school year. The overall hypothesis is that one start at a minimum level at the beginning of the school year, then move on to an average level at mid-year and finally reach a high level at year's end.

Data collection tools

The first tool agreed to with the teachers is the analysis of the fields of experience that represent the pedagogical and didactic soul of the nursery school. Through fields of experience, teachers schedule classroom activities and verify the overall growth trend of the children. So, we start from the fields of experience to highlight the learning of children, who participate in Outdoor Education and the

Forest school. Our opening hypothesis is that the outdoor environment is an exceptional aid in the development of abilities and skills, to the point that pre-schools who have this opportunity demonstrate a peaceful, joyful way of living. The children learn about plants and animals, invent situations of communal life, observe the beauty of creation from life, are self-assured with the whole living world, learn to think and reflect under conditions of active interaction with people and the environment, overcome barriers of the classroom and enjoy a space that makes them fully free to move about and gain knowledge. The process of *outdoor education* generates enthusiasm in all the children, without exception, and appeals to the parents who end up by being enthused with this educational model.

Starting from the fields of experience, we examine three important moments in the growth process of the children.

The first moment is the entrance into the Outdoor School or Forest School in the month of September.

The second moment is in mid-year in the month of January.

The third moment is at year's end in the month of June.

Keeping the fields of experience unaltered as a basic reference, we defined a sample of six boys and girls, who could represent the configuration of the class group, or section. Our hypothesis was to include a shy child, a restless child, an intelligent child, a less stimulated child, a child with behavioural and/or motor difficulties, a child with migratory experience or, should there not be this type of child, a child with mobility difficulty was chosen. This is a typology set up for the experiential purpose of verifying, whether educating outside the classroom can positively and radically influence the character of the child. The pilot typology is experimental in nature, is not thorough with regard to the school situation and represents an attempt to bring to light the validity of Outdoor Education for all children who participate in this educational model. It was presumed that the presence of children who reply to the typology define can be found, in most cases, in one classroom.

Hypothesis and criteria

Of course, a more detailed survey would have involved the longitudinal survey of each child and a surplus of work for the teachers. Recognising this from the outset, it was agreed that it would be enough to extrapolate a critical typology

and defer the definition of any other typologies to subsequent surveys, if required.

The general hypothesis starts from a basic question:

In fact, we wonder if learning outdoors significantly helps the child who is:

- shy, by encouraging it to open up to the milieu and reduce its tendency to stay alone;
- restless, by guiding it to lessen its frenetic liveliness;
- intelligent, by offering occasions to expand their intellectual, emotional and psycho-physical resources;
- less stimulated, to find more and better opportunities for self-discovery, and that of others, the environment and life;
- affected with behavioural and/or motor difficulties, to feel supported and urged to do as much as possible to improve;
- affected by migratory experience, to be appreciated and welcomed into the specific educational context.

The criteria for the teachers in choosing the children are:

1. A child who prevalently shows *shyness*
2. A child who prevalently shows *restlessness*
3. A child who prevalently shows *intelligence*
4. A child who prevalently shows *lack of stimulation*
5. A child who prevalently shows *behavioural and/or motor difficulties*
6. A child who prevalently shows *the effects of migratory experience or, should there be no such case, then consider a child with mobility difficulty*

The survey times are:

September, at the beginning of the school year

January, at mid school year

June, at the end of the school year

The common factors are:

All the classes have the experience of *outdoor education/Outdoor School/Forest School*.

The six children remain the same ones from the beginning to the end of the school year, in support of the longitudinal study of a fixed sample group, since this is a longitudinal-temporal survey lasting one school year.

The choice of children respects sex equality, that is, three males and three females.

The comparative analytical hypotheses are:

- the insertion of a class that is to begin the Outdoor School experience in March and is a mixed class of children aged 3-4-5 with experience of outdoor education;
- the choice of three classes of children aged 3-4-5 without experience of *outdoor education /Outdoor School/Forest School*.

Hereafter is the survey grid for evaluating the skills of the children on the basis of fields of experience and the prototype of the collection of the data pertaining to the first child, who we believe to be especially shy, solely for heuristic purposes.

Data collection grid by fields of experience

For purposes of evaluating the learning ability of the children over the period of September 2018 to June 2019, a data collection grid was set up, in which the following identifying data were recorded: the school name, school year, section, age of the children, the five fields of experience of the nursery/pre-school with descriptive specifications. For each child in the sample group, the teachers write down what they detect with reference to the activities proposed.

The first field of experience, known as *Body and movement*, is specified by the following five descriptive methods:

- knows how to control and coordinate movements with the others and use the
- natural materials available for composing paths of movement;
- knows how to imitate the actions and movements of animals with the body;
- knows how to move agilely on different and uneven types of terrain;
- thinks about the functioning of their own body and the importance of eating
- healthy food;

- exercises by running slowly and quickly, alternating the two paces, if requested, and jumping with the feet together, freely, frontwards and backwards.

The second field of experience, known as *Self and the other*, is specified by the following five descriptive methods:

- knows how to respect and love different life forms;
- takes care of living things and the environment, in which they live;
- understands that, in both persons and animals, communication is an essential tool for cooperation;
- knows how to express their own emotions and recognises them in the colours of nature;
- understands the importance of diversity in both nature and their personal experience.

The third field of experience, known as *Images, sounds and colours*, is specified by the following five descriptive methods:

- knows and can name primary and secondary colours;
- identifies and can name sounds in the surrounding environment;
- is able to recognise the characteristics of elements of nature and classify them;
- explores and draws forms of reality in outdoor schools;
- describes the content of their drawing.

The fourth field of experience, known as *Discussions and words*, is specified by the following six descriptive methods:

- is able to listen to stories being read;
- formulates theories about an event;
- knows how to observe and describe the essential aspects of living organisms and natural phenomena and perceive changes in them;
- knows how to relate a short experience;
- is able to memorise and repeat nursery rhymes and poetry;
- acquires and reworks new words and terms

The fifth field of experience, known as *Knowledge of the world*, is specified by the following five descriptive methods:

- knows the main characteristics of the seasons;
- carefully observes living organisms and natural phenomena and identifies any changes;
- can recognise sensory diversities;

- touches, disassembles, constructs and creates during free playtime;
- understands and differentiates sizes.

The grid gathers together qualitative data. Every teacher describes in words what they observe in the selected child, for the purpose of the data collection. In June, the quantitative evaluation is dealt with, having the availability of the overall trend of development.

Quantitative evaluation of the feedback of the children

Reported in tables 1 and 2 and in graphs 1 and 2 are the quantitative results of the surveys/screenings of the teachers by fields of experience, with both total and detailed frequencies.

Graph 1 highlights the hypothetically growing trend towards the highest modality of “a lot” at year’s end. The “nothing” is zeroed after a year of activity. It is presumed that the “little” prevails during the intermediate phase.

Graph 2 highlights the presence of low evaluations at the beginning of the year, the slow rise at mid-year and the definitely positive result at year’s end. The shy child was encouraged to open up to the milieu and reduce the tendency to stay alone.

In the presentation of the real data, we proceed by selecting a sub-sample, by way of example, composed in order to represent the six predefined children based on their emerging and significant characters and to be kept under constant observation. The grids of the children aged 4 and 5 are extrapolated, so that there is a grid for each section, relative to a single child.

Shy child, aged 4, Legno Verde. *Luna* Section

Restless child, aged 5, Legno Verde, *Stelle* Section

Intelligent child, aged 4, Luna Sapiente, *Blu* Section

Less stimulated child, aged 5, Vittorio Alfieri, 1st Section

Child with behavioural difficulties, aged 5, Luna Sapiente, *Verde* Section

Child with migratory experience, aged 4, Vittorio Alfieri, 1st Section

A value of A lot, Fair, Little, and Nothing is assigned to the qualitative evaluation transcribed during the three data collection moments. This way we have the complete picture of the annual trend, limited to the typology of interest: field of experience and corresponding descriptive method.

Table 1 – Profile hypothesis of the shy child, aged 4, Legno Verde Nursery School, Luna Section, after a year of outdoor school, by fields of experience and frequencies in general

Nds of experience	Sept-18				Jan-19				June-19			
	M	A	P	N	M	A	P	N	M	A	P	N
M 1 Controls	0	0	1	0	0	1	0	0	1	0	0	0
M 2 Imitates	0	0	1	0	0	1	0	0	1	0	0	0
M 3 Moves	0	0	1	0	0	1	0	0	1	0	0	0
M 4 Thinks	0	0	1	0	0	1	0	0	1	0	0	0
M 5 Exercises	0	0	1	0	0	1	0	0	1	0	0	0
A 1 Respects	0	0	0	1	0	1	0	0	1	0	0	0
A 2 Cares for	0	0	0	1	0	0	1	0	1	0	0	0
A 3 Senses	0	0	0	1	0	0	1	0	1	0	0	0
A 4 Expresses	0	0	0	1	0	0	1	0	0	1	0	0
A 5 Understands	0	0	0	1	0	0	1	0	0	1	0	0
1&C 1 Knows	0	0	0	1	0	0	1	0	0	1	0	0
1&C 2 Distinguishes	0	0	1	0	0	0	1	0	0	1	0	0
1&C 3 Manages	0	0	1	0	0	0	1	0	0	1	0	0
1&C Explores	0	0	0	1	0	1	0	0	0	1	0	0
1&C Describes	0	0	1	0	0	1	0	0	0	1	0	0
1P 1 Listens	0	0	0	1	0	1	0	0	0	1	0	0
1P 2 Hypothesises	0	0	0	1	0	1	0	0	0	1	0	0
1P 3 Observes	0	0	0	1	0	1	0	0	0	1	0	0
1P 4 Relates	0	0	0	1	0	0	1	0	1	0	0	0
2P 5 Memorises	0	0	0	1	0	0	1	0	1	0	0	0
2P 6 Acquires	0	0	0	1	0	0	1	0	1	0	0	0
2M 1 Knows	0	0	0	1	0	0	1	0	1	0	0	0
2M 2 Observes	0	0	0	1	0	0	1	0	0	1	0	0
2M 3 Recognises	0	0	0	1	0	0	1	0	0	1	0	0
2M 4 Creates	0	0	0	1	0	0	1	0	0	1	0	0
2M 5 Discriminates	0	0	0	1	0	0	1	0	0	1	0	0
Total	0	0	8	18	0	11	15	0	12	14	0	0

Key: To the left. List of the 5 fields of experience, with the specifics of each of them and the initials of the denomination with the reference verb; the letters M A P N are the levels of the evaluation scale A Lot, Fair, Little, Nothing (**M**olto **A**bbastanza **P**oco **N**ulla); the score 0 or 1 indicates the absence of an evaluation.

Graph 1 - Profile hypothesis of the shy child, aged 4, Legno Verde Nursery School, Luna section, after a year of outdoor school, by fields of experience and total frequencies

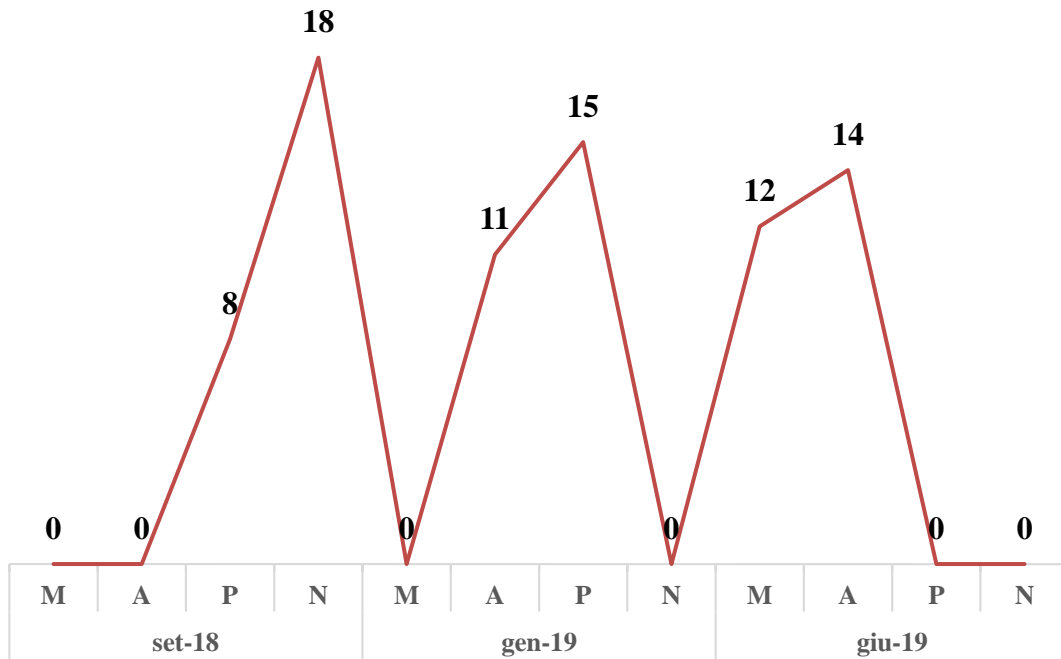
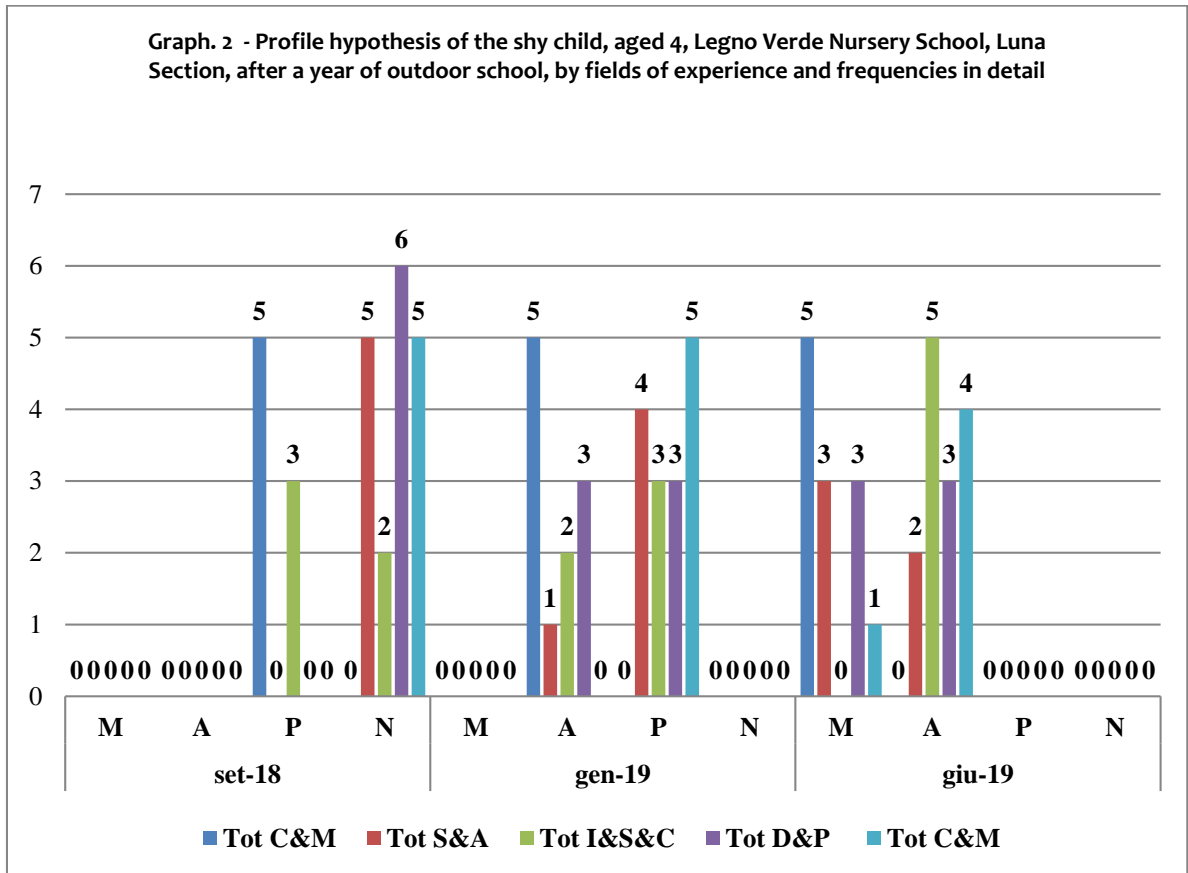


Table 2 – Profile hypothesis of the shy child, aged 4, Legno Verde Nursery School, Luna Section, after a year of outdoor school, by fields of experience and frequencies in detail

No.	ds of experience	Sept-18				Jan-19				June-19			
		M	A	P	N	M	A	P	N	M	A	P	N
1	M 1 Controls	0	0	1	0	0	1	0	0	1	0	0	0
2	M 2 Imitates	0	0	1	0	0	1	0	0	1	0	0	0
3	M 3 Moves	0	0	1	0	0	1	0	0	1	0	0	0
4	M 4 Thinks	0	0	1	0	0	1	0	0	1	0	0	0
5	M 5 Exercises	0	0	1	0	0	1	0	0	1	0	0	0
	C&M	0	0	5	0	0	5	0	0	5	0	0	0
6	A 1 Respects	0	0	0	1	0	1	0	0	1	0	0	0
7	A 2 Cares for	0	0	0	1	0	0	1	0	1	0	0	0
8	A 3 Senses	0	0	0	1	0	0	1	0	1	0	0	0
9	A 4 Expresses	0	0	0	1	0	0	1	0	0	1	0	0
10	A 5 Understands	0	0	0	1	0	0	1	0	0	1	0	0
	tial total S&A	0	0	0	5	0	1	4	0	3	2	0	0
11	&C 1 Knows	0	0	0	1	0	0	1	0	0	1	0	0
12	&C 2 Distinguishes	0	0	1	0	0	0	1	0	0	1	0	0
13	&C 3 Manages	0	0	1	0	0	0	1	0	0	1	0	0
14	&C Explores	0	0	0	1	0	1	0	0	0	1	0	0
15	&C Describes	0	0	1	0	0	1	0	0	0	1	0	0
	I&S&C	0	0	3	2	0	2	3	0	0	5	0	0
16	P 1 Listens	0	0	0	1	0	1	0	0	0	1	0	0
17	P 2 Hypothesises	0	0	0	1	0	1	0	0	0	1	0	0
18	P 3 Observes	0	0	0	1	0	1	0	0	0	1	0	0
19	P 4 Relates	0	0	0	1	0	0	1	0	1	0	0	0
20	P 5 Memorises	0	0	0	1	0	0	1	0	1	0	0	0
21	P 6 Acquires	0	0	0	1	0	0	1	0	1	0	0	0
	D&P	0	0	0	6	0	3	3	0	3	3	0	0
22	M 1 Knows	0	0	0	1	0	0	1	0	1	0	0	0
23	M 2 Observes	0	0	0	1	0	0	1	0	0	1	0	0
24	M 3 Recognises	0	0	0	1	0	0	1	0	0	1	0	0
25	M 4 Creates	0	0	0	1	0	0	1	0	0	1	0	0
26	M 5 Discriminates	0	0	0	1	0	0	1	0	0	1	0	0
	C&M	0	0	0	5	0	0	5	0	1	4	0	0

Graph. 2 - Profile hypothesis of the shy child, aged 4, Legno Verde Nursery School, Luna Section, after a year of outdoor school, by fields of experience and frequencies in detail



Analysis of the results

Reported in the specific grids are examples extrapolated from the transcriptions of the teachers over three data collection periods.

In the description of a shy child, the teacher notes how the behaviour in September, January and June, as regards the first field of experience “Body and Movement”, first specific method: “Knows how to control and coordinate movements with the others and use the natural materials available for composing paths of movement”: “Is disoriented and indecisive” (Sept.-18) (Little); “Controls movement with the help of an adult” (Jan.-19) (Fair); “Is engaged and curious about the final results” (June-19) (A lot). The evaluation of the teacher concerns the child’s ability to follow paths outside, through rocks and pieces of wood, and deal with crossings. The learning trend through outdoor experience rises decisively. By year’s end, the shy child has gained self-confidence, is more self-assured and knows how to create a goal.

In the description of a *restless* child, the teacher writes about the second Field of Experience “Self and the other”, second descriptive method “Takes care of living things and the environment, in which they live”: “Rips off leaves and bothers the animals” (Sept.-18) (Nothing); “Does not bother the animals and respects the plants” (Jan.-19) (A lot); “Recognises that waste has a special collection place” (June-19) (A lot). In September, this child did not know how to relate well to plants and animals. In January, the restless child shows visible signs of improvement in the relationship with the natural environment. Year’s end sees a steady positive learning ability to respect the environment that receives them.

In the description of an *intelligent* child, the teacher writes about the third Field of Experience “Images, sounds and colours”, third descriptive method “Is able to recognise the characteristics of elements of nature and classify them”: “yes” (A lot) (Oct.-18); “yes” (A lot) (Jan.-19); “yes” (A lot) (June-19). In this case, progressive trends are not recorded.

In the description of a *less stimulated* child, the teacher writes about the fourth Field of Experience “Discussions and words”, fourth descriptive method “Knows how to narrate a short experience;”: lack of data collection during the three scheduled months, (Oct.-18) (Nothing), (Jan.-19) (Nothing), (June-19) (Nothing). In this case, the teacher does not record exact development trends of the learning ability.

In the description of a child with *behavioural difficulties*, the teacher writes about the fourth Field of Experience “Discussions and words”, fifth descriptive method “Memorises and repeats nursery rhymes and poetry”: lack of data collection for Oct.-18 (Nothing) and Jan.-19 (Nothing), “Began” (June-19) (Little). The child begins to open up in June.

In the description of a child with *migratory experience*, the teacher writes about the fifth Field of Experience “Knowledge of the world”, fifth descriptive method “Understands and differentiates sizes”: “Understands sizes” (Oct. -18) (Little); “Understands sizes and differentiates, but the action is not accompanied by verbalisation” (Jan.-19) (Fair); “Understands sizes, differentiates between them and accompanies the action with verbalisation” (June-19) (A lot). The child starts from a fair standpoint and slowly progresses until reaching top performance.

Conclusions

From the initial data collected using this method to analyse learning abilities by the fields of experience specified, and through the descriptive methods of the

socio-psycho-physical development, one can see that, in the Outdoor School and the Forest School, the children pass from a stance of distance, indifference and sometimes hesitation towards the outside environment, with all its elements (i.e. animal world, vegetable world, mineral world) to one of active participation and living within an open context, not enclosed by classroom walls. Those children, who participate less at the beginning of the *outdoor education* experience, reach a level of maturity of positive interaction at year's end, hereby relating to people, animals and things in a more independent, relaxed manner. There is a notable growth in learning abilities in children who are participatory from the outset; they reach the ability to formulate complete thoughts that describe their outdoor experience quite well.

From this point of view, and as an additional positive result of outdoor education, we would like to cite the visit of the class of 5-year-olds from Legno Verde, Stelle Section, to the archaeological site of *Polledrara di Cecanibbio*: the elephant cemetery. After the visit, during three months of pedagogical and didactic work from April to June, the children made a reconstruction of this site in the school garden. The visit to the site was carried out within *Progetto ARTIS Accessibilità Roma Tre Innovazione tecnologica Sostenibilità dell'Ateneo Roma Tre*. (ARTIS Project: Accessibility Roma Tre, Technological Innovation, Sustainability of the University Roma Tre)

As can be derived from this first treatment of the data, in order to proceed with a sufficient appreciation of the benefits of the Outdoor School/Forest School, teachers must be heavily involved, since the more they are able to document the development of each child, the more they will be able to demonstrate the benefits of learning under conditions of *outdoor education*.

The capacity to report the outdoor educational life of a child should not be underrated. It requires preparatory scientific training for better evidence of the great commitment that Outdoor School and the Forest School entail in all their forms of implementation.

Finally, the comparison with school classes that do not practice the teaching of outdoor education is made necessary for the purpose of better appreciating the advantages of *outdoor education*.

In this study, the concept of sustainability was interpreted as an opportunity to develop a positive relationship with the environment. Children learned to respect nature, plants, and animals, and the feeling of freedom has been well balanced with personal curiosity and creativity. Children with special needs showed a deep involvement in terms of feeling joy and pleasure to be in the group, improved their

ability to play with friends and their participation increased a lot. During our visit to open-air schools, we saw the happiness of all children and the desire to stay outdoor longer and longer. Children persuaded parents about the richness of this education, regardless of the weather conditions.

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