

**EDU WORLD 2022****Edu World International Conference Education Facing Contemporary World Issues****TEACHERS' OPINION REGARDING ON IMPORTANCE OF  
WILD GARDEN FOR STUDENTS**

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**Abstract**

The research presented in this paper aimed to highlight the importance of the wild garden arranged in the courtyard of the Alexandru Davila Secondary School, from Pitești, during the implementation period of the project entitled Wild! The wild garden for learning and development, regarding the acquisition by primary school students of knowledge about plants and animals in this green space, but also the attitude and behaviour of students during the activities carried out, as a result of the application of the activity models proposed in this framework project. In order to achieve the proposed goal, we used the questionnaire as a research method. Analysing the answers of the 12 teachers surveyed, it was found that there is some variation in terms of learning outcomes obtained by students in grades 0-2 and those of older students. However, it can be said that most students have mastered the popular name of the species of plants and animals observed. They learned to distinguish between grasses, shrubs and trees and to describe them correctly. They also correctly mentioned different characteristics of some observed animal species. They highlighted the changes that occur in the appearance of a plant over a period of time and made the correct measurements. They learned to sow or plant grass plants, which they would later care for. They learned the technique of pressing some organs of the analysed plants, in order to make some herbs.

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*Keywords:* Frontal activities, in pairs activities, individual activities, primary education, wildgarden

## 1. Introduction

The green space in the courtyard of most schools in the world can be an open window for students to learn about the world of plants and animals. In this place, students guided by teachers can create a wild garden for study. Here, any species, whether native or cultivated plants or existing animals in the garden or visitors, can be carefully analyzed by students. Thus, students can be active and acquire new knowledge through their own effort.

The wild garden can be the place of observation and experimentation of students of different ages, from different classes, but who study at the same school. That is why it would be advisable to involve more people in its planning and creation, such as the principal of the school, representatives of teachers who teach in different classes and who want to carry out formal or non-formal activities in the garden, in accordance with the contents of the curricular documents, the student representative, the parents' representative, possibly other people who could contribute to the realization of the garden. Following the discussions, a small construction project can be carried out to highlight the area where the hedge will be placed, to protect the garden from the wind, the areas where different species of herbaceous plants will be sown or planted, the areas where they will be plant shrubs and trees, wetland, if necessary, etc.

Following the steps mentioned above, at the Alexandru Davila Secondary School in Pitești, such an ecosystem was arranged, within the project entitled *WILD! The wild garden for learning and development* Erasmus + (<https://www.wildgardenschool.eu/>). Particular attention was paid to aromatic plants. A lavender (*Lavandula* spp.), was planted in the garden, providing enough space for development. Basil (*Ocimum basilicum*), mint (*Mentha* spp.), oregano (*Origanum vulgare*), rosemary (*Rosmarinus officinalis*), and thyme (*Thymus* spp.) Were sown in layers so that students could smell the distinctive scent of each species.

In this green space, the 12 teachers involved in the implementation of the project products guided the activity of students in grades 0-4, taking into account the models of teaching activities that I proposed. These can be found in subchapter 2.2. *Suitable teaching methods to be used in activities with ecosystems arranged and cared for by students*, from chapter 2 - *The pedagogy of nature* of the methodological book entitled *Teach in the Wild Garden* - the Intellectual Output No.2. This product of the project (IO 02) was developed in collaboration by researchers from Studio Naturalistico Hyla, University of Lodz, and the University of Pitesti (<https://www.wildgardenschool.eu/>).

The proposed models offer teachers the opportunity to carry out frontal activities, in groups, in pairs or individually, in a formal or non-formal setting, by selecting and applying a diverse range of teaching methods, such as the following: the conversation, the demonstration, the observation (Petruța, 2021), the practical work, the experiment, the problem-solving method, etc. There are models of activities developed for students in grades 0-2, for students in the next two grades and for all students in primary school. Thanks to the worksheets with differentiated tasks, which accompany most of these models, teachers may involve students with different disabilities in certain activities, depending on their desire to get to know the plants or animals in the wild garden. The activities to be carried out individually, in pairs or in groups have been proposed for a group of 8-12 students, so that the green space is not damaged. During the implementation period of the project, the teachers chose the activity models, which they applied in the activity carried out with the students outdoors, as well as their number.

## 2. Problem Statement

Many schools around the world have set up a garden in the schoolyard, where students can research and rediscover some scientific knowledge about the living organisms that populate it. At the moment, schools that have almost entirely a concrete courtyard are rare exceptions.

For the planning and realization of the school garden, teachers can consult various sites on the Internet, which provide guides, suggestions, examples and suggest activities that can be carried out with students outdoors. Here are some of them:

The Schools Global Gardens Network (SGGN), coordinated by the Reading International Solidarity Centre (RISC), is helping schools create study environments. The SGGN website indicates how the school garden can be a resource for the entire curriculum and how it can be used to achieve cross-curricular topics. It also contains guides for beginners and experts on building beds with sustainable materials, growing fruits and vegetables, photo packages for school gardens in Uganda, etc. (Schools Global Gardens Network [SGGN], 2010).

On the Greenheart Education website there are suggestions on the steps to follow to create a school garden. There are also resources for the following types of gardens, such as: "vegetable soup garden, crayon colour garden or rainbow garden, sensory garden, tea garden, herb garden or perfume garden, butterfly garden, salad garden, music garden, jelly garden, bird garden, art garden, a garden of nature's medicines (herbal plants), fruit garden, moon garden, winter garden", etc. (Greenheart Education, 2007).

ECO gardener is a site that highlights the importance of students' orientation towards school gardening, citing the numerous research conducted in the US and the UK (ECO Gardener, 2021).

There are 313 resources on the website of the Royal Society for Horticulture (RHS), which can be accessed by teachers who want to stimulate school gardening. We mention some of these: "a guide to watering plants", "useful plants to teach the science curriculum", "become a pomologist (or fruit expert!)", etc. (Royal Society for Horticulture [RHS], 2022).

The public gardening series Growing a Greener World from American Public Television can also be viewed on the Internet site where episodes featuring information on ecological gardening, sustainable agriculture, cooking and harvesting are presented. In the episode entitled Creating Certified Wildlife Habitats (2015), the Ford school in Georgia is presented. The school's natural habitat gardens cover nearly 20 acres and include "several wildlife habitats, nature trails, pollinator gardens and edible landscapes." They are used "as outdoor classrooms to reconnect children to nature and teach environmental science" (Growing a Greener World TV [GGWTV], 2015).

There are several types of educational gardens, as can be seen in the classification made by Wake and Birdsall (2016), given the purpose of each of them. Thus, there are: "food gardens, flowers, native habitats, recycling, rainwater management, art, sustainable energy generation and permaculture." The two authors of the article have an original point of view regarding the design of school gardens, proposing the involvement of landscape architects for the creation of diversified school green spaces, in which biodiversity is conserved and students study the environment. Regarding the activities that children can carry out in these ecosystems, he states that they can be done: "games and physical exercises; experiential (interaction with the garden, which offers learning opportunities, for example in science and

mathematics); development of environmental protection; learning about the origins of food and nutrition, socialization, and vocational training through the development of gardening skills ".

Austin (2022) highlighted the variety of "imaginative ways" in which Irish primary schools use students to "encourage children's development". At the same time, he appreciated that they can be the basis of integrated learning.

The activity carried out by the students in the school garden has positive effects on them. Many researchers have highlighted the improvement of their health as a result of gardening activities, in which they exercised and became aware of the importance of different vegetables for a healthy diet (Papadopoulou et al., 2020). School gardening has contributed to the growing desire of students to taste and consume vegetables daily, to include them in their personal diet (Leuven et al., 2018; Schreinemachers et al., 2017). This aspect is also emphasized by researchers who have considered students with obesity and type 2 diabetes (Hedley et al., 2004; Ozer, 2007). The direct involvement of students in the activities of observation and care of different plant species, stimulated their experiential learning, helping to increase interest in learning and improve their school performance (Papadopoulou et al., 2020). Outdoor activities have also had a positive effect on their social and environmental behavior (Blair, 2009; Eugenio-Gozalbo et al., 2020; Papadopoulou et al., 2020).

### 3. Research Questions

We considered the following questions that guided the research:

- i. What activities did the teachers prefer to carry out with the students from grades 0-4 in the wild garden, during the implementation period of the project entitled *Wild! The wild garden for learning and development* Erasmus + considering the way they are organized?
- ii. What species of plants were selected by teachers to be observed, described, analysed, and possibly cared for by primary school students at Alexandru Davila High School in Pitesti?
- iii. What species of animals were observed and analysed by the students involved in the aforementioned project?
- iv. What were the results obtained after carrying out some activities with the students in the wild garden?

### 4. Purpose of the Study

The purpose of the research was to emphasize the importance of the wild garden arranged in the courtyard of the Alexandru Davila Gymnasium School, from Pitești, during the implementation period of the project entitled *Wild! The wild garden for learning and development* Erasmus +, in terms of the acquisition by primary school students of knowledge about plants and animals in this green space, but also the attitude and behaviour of students during the activities carried out, as a result of the application of the activity models proposed in the framework this project.

The objectives were the following:

- i. Highlighting the teachers' option for the form of organizing students from grades 0-4 in the activities carried out in the wild garden, during the implementation period of the project entitled Wild! The wild garden for learning and development, Erasmus +.
- ii. Identification of plant species that were selected by teachers to be observed, described analysed, and possibly cared for by primary school students at Alexandru Davila High School in Pitesti.
- iii. Identification of animal species that have been characterized based on observations made in the wild garden.
- iv. Identify the teachers' point of view regarding the results obtained by the students and their attitude and behaviour during the activities carried out in the ecosystem arranged in the school garden.

The research was based on the following hypothesis: if primary school teachers applied both models that involve frontal activity and models that stimulate individual or group activity in outdoor activities, then students' results in terms of the understanding and acquisition of knowledge about plants and animals has improved, while changes in their attitude and behaviour have been noted.

## **5. Research Methods**

The research method we applied to achieve the purpose and objectives set out above was the questionnaire. It was distributed in order to complete the 12 teachers from Alexandru Davila Secondary School, from Pitești, who carried out activities in the wild garden with the students from grades 0-4, within the project entitled Wild! The wild garden for learning and development. Erasmus +, in the school year 2021-2022. Thus, questionnaires were offered to three teachers who taught in 0 grade, 1th grade and 4th grade, to a teacher who taught lessons in 2nd grade, and to two teachers who taught in 3rd grade. The questions referred to: the teachers' choice of the type of activity according to the form of organization of the students, the observed plant and animal species whose popular name was adopted by the students, the students' ability to distinguish grassy plants, shrubs and trees and to describe correctly, the ability of students to correctly characterize the animals observed, the ability of students to distinguish between stages in the life cycle of plants and to perform measurements correctly, the formation of the ability to sow or plant correctly some plant species, to be cared for later, and to changes in student behaviour during outdoor activities.

## **6. Findings**

Analysing the answers to the questionnaire, it was found that 50% of teachers chose both models based on frontal activity and in pairs or individually, 33.33% of teachers opted for. Models based on frontal activity 16.66% of teachers applied models based on activity in pairs or individually. An identical

percentage of teachers stated that they also involved students with certain disabilities in their activities, and the rest of the teachers stated that they do not have such students in the classroom.

In the wild garden, students observed individually or in pairs many species of plants, such as basil, mint, thread, lavender, sage, verbena, rosemary, thyme, black shock, blackberry, forget-me-not water lily, strawberry and hazelnut. The correct name, in popular language, of the observed plant species was acquired to some extent by students in grades 0-2, as mentioned by 50% of teachers. The 3rd and 4th grade students largely learned their name, in popular language, as stated by the same percentage of teachers surveyed.

During the frontal outdoor activities, 83.33% of the teachers mentioned that the students were largely able to distinguish between plants, grasses, shrubs and trees. A very small percentage, representing 16.66% of teachers, stated that students were able to distinguish these plants to a small extent.

Based on the observations made, 33.33% of the teachers pointed out that the students in grades 0-2 largely specified the characteristics of the aerial and underground parts of the plants in terms of colour and shape. The rest of the teachers who taught in the aforementioned classes, respectively 25%, pointed out that the students mentioned these characteristics to some extent. The characteristics related to colour, shape, smooth or rough appearance, etc., required of students in grades 3 and 4, were largely mentioned by them, as mentioned by 41.66% of teachers. The activities took place individually or in pairs.

The students observed several species of animals in the wild garden, among which we mention: ant, worm, bee, bumblebee, wasp, swallow, crow, sparrow, sparrow hawk, different species of butterflies and beetles. All the teachers stated that the students correctly mastered the popular name of the observed species and characterized them correctly, taking into account the requirements mentioned in the worksheets. All the teachers mentioned that the students noticed ants. The earthworm was the species observed by almost all the students of the classes that participated in the implementation of the project, as mentioned by 83.33% of the surveyed teachers, the activity being carried out in groups. In grades 0-2, 16.66% of teachers reported that students observed bees, bumblebees, wasps, butterflies and beetles. In the 3rd and 4th grades, 33.33% of the teachers pointed out that the students had individually observed the birds mentioned above. Butterflies were also observed by students in these classes, as mentioned by a higher percentage of teachers, respectively 50%. Only 16.66% of teachers said that students noticed different species of beetles.

Regarding the recognition by many students of the different stages of the plant life cycle, 83.33% of teachers mentioned that the pairs of students largely measured the observed plant correctly and correctly noted the time of changes in the appearance of the plant. A very small percentage of teachers, respectively 16.66%, stated that the students performed these tasks to a certain extent.

Regarding the sowing or planting of potted plant species, all the teachers mentioned that the students formed the habit of sowing or planting correctly some potted plant species or in the wild garden. Also, 83.33% of the teachers stated that the students, individually or in pairs, learned to take care of the plants properly, to water them only when necessary, to loosen the soil, to remove the dry leaves, etc.

All the teachers mentioned that the students, who worked individually, learned the technique of pressing the different component parts of the plants. Following the activity, each class made a leafy herbarium belonging to different species of plants in the wild garden.

All the teachers mentioned that the students involved in the implementation of the project were delighted and eager to work in the wild garden. They were curious to discover every plant in this ecosystem, to touch it and smell it. Also, 83.33% of teachers mentioned that students became more careful with plants and animals, expressed a desire to care for and protect them and were more responsible for their own actions in the environment.

## **7. Conclusions**

The wild garden can be considered a green space created by students under the guidance of teachers, for students, for their learning activity. In this ecosystem, students from different classes can make observations, practical works or experiments, they can actively acquire knowledge about different species of plants and animals, about the relationships between them, about how they are influenced by certain environmental factors, etc.

Planning and designing this green space in a school yard is an important step towards landscaping. Several people may be involved in the construction project, either some who want to work in this place, such as representatives of teachers and students, or others who can contribute ideas or material to the design of the ecosystem.

The wild garden made at the Alexandru Davila Secondary School in Pitești, within the project entitled WILD! The wild garden for learning and development Erasmus +, following the stages maintained above, in the school year 2020-2021, was the place where primary school teachers carried out various activities with students, based on the activity models I proposed within this project (<https://www.wildgardenschool.eu/>). Some models suggest how to carry out the activities for the first three grades of primary education, others suggest how to carry out the activities in the 3rd and 4th grades, and others are intended for all students in grades 0-4.

From the multitude of proposed activity models, the teachers had the opportunity to opt for some of them, during the implementation of the project products. As can be seen from the research conducted, half of the teachers chose to apply in the activity with the students models based on frontal activity, in pairs or individually. A lower percentage, respectively 33.33% of teachers opted for models based on frontal activity. Only 16.66% of teachers applied models based on activity in pairs or individually.

During the activities carried out in the wild garden, all the teachers surveyed mentioned that the students have formed the habit of sowing or planting correctly some species of plants in pots or in the wild garden and that they have mastered the technique of pressing different vegetative or propagating organs of plants.

Most teachers mentioned that the students were largely able to distinguish between grasses, shrubs and trees. During the frontal activities, the students noticed the earthworm, working in groups, and described it correctly. The students also managed to identify the different stages in the life cycle of the observed plants, working in pairs.

The correct name, in popular language, of the observed animal species was acquired by the students as mentioned by all the teachers. In plants, students in grades 0-2 found it harder to master their names, compared to students in grades 3 and 4, as mentioned by the teachers surveyed. The characteristics of the plant organs observed by the students in the 3rd and 4th grades were largely mentioned. In grades 0-2, some students knew how to mention these characteristics, while other students specified them only to a certain extent. The activity took place individually or in pairs.

Among the changes in attitudes and behaviour of students involved in the project entitled WILD! The wild garden for learning and development Erasmus +, which were observed by the teachers surveyed remind us of the manifestation of the desire to care for and protect plants and animals, as well as increasing responsibility for their own behaviour in nature.

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