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School Gardens in Poland – Rediscovered Places

Ogrody szkolne w Polsce – miejsca odkrywane na nowo

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Abstract: School gardens have been present in the educational space of the Polish school for many years. In recent decades, however, they have ceased to be appreciated. Efforts have been made to modernize laboratories, they have been equipped with measuring instruments, digital devices and multimedia equipment. A natural laboratory, which a garden in fact is, has become a symbol of the past. It remained only in few schools, performing rather an aesthetic function, less often didactic or educational one. The present article depicts a historical outline, shows earlier and currently noticed possibilities of using school gardens in Poland. An analysis of previous studies on gardens is presented as well. A contemporary design of a school garden was proposed to prepare students of pedagogical faculties for activities in the garden with children. School gardens may contribute to the prevention of “nature deficit” (Louv 2014, 54), they may give a sense of closeness to nature also in urban realities¹. M. Vogt-Kostecka notes that the fear of dirt, wind and ticks limits children’s free play in a meadow and in a forest. Limited access to nature is particularly visible among urban children (Vogt-Kostecka 2017, 11). Gradually, the view of school gardens has been changing and their therapeutic potential (hortitherapy) is noticed.

Keywords: school garden, nature, methodology of social and natural sciences, hortitherapy

Streszczenie: Ogród szkolny przez wiele lat był obecny w przestrzeni edukacyjnej polskiej szkoły. W ostatnich dziesięcioleciach przestał być doceniany. Dążono do unowocześnienia pracowni, wyposażano je w przyrządy pomiarowe, urządzenia cyfrowe, sprzęt multimedialny. Naturalna pracownia, jaką jest ogród sam w sobie stała się symbolem przeszłości. Pozostał tylko w nielicznych szkołach pełniąc raczej funkcję estetyczną, rzadziej dydaktyczną czy wychowawczą. W niniejszym artykule przedstawiono rys historyczny, ukazano wcześniejsze i aktualnie dostrzegane możliwości wykorzystania ogrodów szkolnych w Polsce. Przedstawiono też analizę wcześniejszych badań na temat ogrodów. Zaproponowany został współczesny projekt ogrodu szkolnego służącego przygotowaniu studentów kierunków pedagogicznych do aktywności w ogrodzie z dziećmi. Ogrody szkolne mogą przyczynić się do zapobiegania “deficytowi natury” (Louv 2014, 54), mogą dać poczucie bliskości z przyrodą także w realiach miejskich². M. Vogt – Kostecka zauważa, że lęk przed brudem, wiatrem, kleszczami wpływa na ograniczenie dzieciom swobodnej zabawy na łące i w lesie. Niewielki dostęp do natury szczególnie widoczny jest wśród dzieci miejskich (Vogt-Kostecka 2017, 11). Stopniowo zmienia się spojrzenie na ogrody szkolne i dostrzegany jest ich potencjał terapeutyczny (hortiterapia).

Słowa kluczowe: ogród szkolny, przyroda, metodyka nauk społeczno-przyrodniczych, hortiterapia

¹ According to R. Louv, the nature deficit is manifested in problems with concentration of attention, hyperactivity, reduced psychophysical fitness.

² Według R. Louva deficyt natury objawia się problemami z koncentracją uwagi, nadpobudliwością oraz obniżoną sprawnością psychofizyczną.

If you have a garden and a library,
you have everything you need.

Cicero

Introduction

The aim of the article is to present the historical outline and current possibilities of using the school garden, as well as to indicate the role of the teacher in creating a garden and promoting children's activity in the natural environment.

Gardens have accompanied men since ancient times. They are places associated with nature, peace, rest, but they also have a deep existential meaning (Śliwerski and Paluch 2021). The biblical archetype of paradise translates into a positive image of abundance and warmth, but also the essence of man's supervision, nurturing and care of nature. Over the years, gardens have served a variety of functions, both aesthetic, recreational and practical, related to the production of food and meeting family needs. They were shaped by historical and civilizational conditions.

Activities related to gardening, plant selection, adaptation and economic optimization of cultivated land contributed to the development of horticulture. Specific purposes of gardens influenced their diverse perceptions, and their didactic values were also appreciated. Gardening, according to sociogardeners, is "the art and knowledge of cultivation of flowers, fruit, vegetables, trees and shrubs, the result of which is mental and emotional development of man, wealth and health of society, integration of the 'garden' with the momentum of modern civilization" (Dudkiewicz, Krupiński, and Stefanek 2019, 8). A school garden may be defined as any garden in which children can be taught to care for flowers, vegetables, or both, by someone who can instill in them a love of outdoor work and such knowledge of the forces of nature and its laws that will develop their character and efficiency (Greene 1910, 3).

1. History of school gardens

The qualities of gardens were noticed by great educators. The educational value of the garden was emphasized by J.A. Komeński, J.H. Pestalozzi, J. Dewey, O. Decroly. J.A. Komeński proposed: "not to draw wisdom from books, but from heaven, earth, oaks and beeches; that is to know and investigate things themselves, and not only other people's observations and testimonies of things" (Komeński 1956, 161). We can read about positive aspects of contact with nature in the pedagogical assumptions of Maria Montessori, Waldorf schools, kindergartens and forest schools.

A Polish count, August Cieszkowski showed educational activity in Greater Poland. A landowner, philosopher who based his life on the values presented in the work *Ojciec Nasz [Our Father]*, was a propagator of nurseries for children. He included his proposals in the work *O ochronkach wiejskich [On Rural Nurseries]* published in 1842. He developed his activity at a manor house in Wierzenica. A. Cieszkowski believed that next to a nursery there should be a garden preparing children for work. Apart from a flowerbed for the whole group, each child should have one of their own for which they would be responsible.

In 1921, Władysław Szafer, a scientist, botanist, defender of nature, (Wojciechowski 2009) emphasized the role of the garden in the science of botany and plant physiology, he also stressed that "the used garden planned by a teacher for educational purposes may (...) have a twofold meaning: first, as a training of the observational sense, and secondly as a place of useful and pleasant physical work, which exercises the body, teaches patience and tempers the will" (Szafer 1921, 29).

Marian Sokołowski (1894-1939), professor of forestry, activist for nature conservation, believed that education should take place in harmony with nature. Feeling beauty helps shaping patriotic and historical values. In the yearbooks published in 1925, this activist for nature conservation emphasized

that knowledge about nature conservation should be passed on at school. Communicating with nature, feeding animals and birds, cultivating potted plants, planting fruit trees and establishing school gardens was to foster the formation of ecological attitudes. He pointed to the possibility of creating a separate school subject, or introducing content related to nature into geography, history and the Polish language. Andrzej Czudek, forester, naturalist, nature conservation activist, also saw the possibility of taking up issues related to nature protection and ecology in classes within various school subjects. Prof. Adam Wodziczko also wrote about obligatory flower growing and working in a garden in 1934. Wodziczko emphasized the inclusion of issues in the educational goals of the school. He also postulated the organization of preparatory courses for teachers (Wolter 2013, 98).

On January 2, 1926, the Society for the Promotion of School Gardens was established in Warsaw (TPOS 1926). It carried out support and counselling activities for teachers and provided plans of gardens. Methods of using gardens in didactic and educational work of the school were developed (Wolter 2013, 229). The aim of the Society was to develop the possibility of using school gardens in teaching and upbringing, as well as shaping aesthetic values and horticultural culture. The Society supported school garden builders by providing seedlings, either free of charge or at a reduced price. Model gardens inspiring local residents to individual works were to be located next to schools. The President of the Society, Włodzimierz Gorjaczkowski, emphasized the importance of establishing gardens at schools in order to understand the garden ecosystem and the principles of the natural environment. In 1937, in the *Przyroda i technika [Nature and Technology]* magazine he published information that the Society had established a model school garden on the premises of the Plant Breeding Department in Warsaw. It was supposed to be an example of land arrangement

supporting teachers in planning activities in the garden (Wolter 2019, 9).

Carrying out didactic and educational tasks, as well as meeting social needs,¹ gardens were established at schools in the post-war period. The educational and practical values of gardens were highlighted in the Instruction of 13 May 1954 on the experimental plot (Instrukcja 1954), making mandatory organization of experimental plots, among others at primary schools and high schools (Kowalski and Grott 2015, 40). Classes and extracurricular activities aimed at the implementation of didactic, educational and economic tasks were to be conducted there. The document recommended that crops obtained from gardens should complement the children's diet and prevent malnutrition. The garden was to be conducive to learning nature through observation and practical activities. It was also supposed to prepare children for work and functioning in society, be a place enabling to transfer knowledge about new solutions used in horticulture, agriculture and farming. According to the assumptions of this Instruction, "work on the plot was to instill social attitudes, teach collective action and prepare for life in society" (Kowalski and Grott 2015, 42).

E.J. Frątczak in the book *Ogrody przedszkolne [Kindergarten Gardens]* from 1974 recall and adapt the experiments in the garden proposed by Janina Antonowicz in 1919 (Frątczak 1977). They not only teach children the need to work, but also give them numerous possibilities for observation and conducting experiments. An example illustrating the recommendations of that time are the tasks cited below.

First experiment. A box with washed sand should be buried on a bed with fertile soil; Then sow lettuce seeds both in fertile soil and in the box. Observations of seed growth should be carried out for several days. The observation allows us to conclude that the seeds growing in the sand will germinate faster, but their growth and development

1 The period after 1945.

will weaken. Seeds sown in fertile soil will germinate later, but they will develop faster and steadily. The exercise shows the sense and importance of fertilizing the soil and growing plants in the right place.

The second experiment concerns the ways of seed preparation. Half of the beans prepared for sowing should be soaked. Dry seeds are sown in one place in the soil, moist seeds in another. The task is to observe which seeds germinate first. The experiment shows the importance of seed preparation for sowing for the rate of growth.

Another experiment concerns the conditions of plant growth. It requires sowing several rows of radish, then, covering half of the rows with shading fabric. As a result of observation of the plants, it can be concluded that the seeds covered with fabric produce a large, underground edible part. Seeds growing without cover produce an extensive aerial part, flowers and seeds. The experiment shows the possibilities of the gardener's influence on the effects of cultivation depending on the adopted purpose. These are just a few examples of garden experiments proposed for 6-year-old children over 100 years ago. These tasks show the educational value of the recommended garden work.

2. School gardens today

Preparation for work and harvesting crops for food production are not the goal of didactic and educational activities of modern school gardens. Gardens are workshops that have been forgotten. The progress in equipping classrooms with measuring instruments and multimedia equipment, emphasis on memorizing the content of education, results in the focus on indoor activities.

Recommendations for active exploration of nature through observation and experience may be found in the provisions of the current core curriculum, but there is no indication for conducting classes in a school garden.

The tasks are to ensure comprehensive personal development of students by deepening knowledge as well as satisfying and awakening their natural cognitive curiosity (Ordza 2018, 55).

In accordance with the recommendations of the curriculum at the stage of early school education, the student: "(...) conducts simple plant growing, presents the rules for caring for domestic, breeding and other animals; plans, performs simple observations, experiments on natural objects and phenomena, creates notes from observations, explains the essence of observed phenomena according to the cause-and-effect and temporal process" (Rozporządzenie 2022).

A school garden enables the implementation of assumptions regarding social and natural education. Gardens can also have educational functions. They have an impact on shaping sensitivity to the development of every living being, mindfulness to changes in nature, self-discipline and a sense of responsibility for other beings. Outdoor education "is a way of experiential learning and teaching that requires the involvement of all the senses and spheres of development and direct relations with the environment" (Michalak and Parczewska 2019, 63). It provides multidimensional exploration of the world, develops cognitive skills, enables interaction with every part of the natural and cultural environment.

3. Potential of gardens

A school garden is a place created for observation and experimentation. "The backyard and its garden are often the first point of contact with nature" (Louv 2014, 209). It is also a space created to transfer knowledge about the origin of plants constituting food products. They serve to educate children about local products and their farming. The ability to grow crops has an impact on shortening the supply chain and reducing the carbon footprint (Kulczycka and

Wernicka 2015)². It contributes to raising awareness of sustainable development and indicates opportunities to reduce the greenhouse effect.

The garden enables an ecological view that sees ecosystem connections which is conducive to developing in children pro-ecological attitudes. This is a place of observing insects, providing them with places of existence, such as a flower meadow, houses for insects. It is the soil and the animals living there. Soil makes it possible to conduct research, e.g., pH determination, search for organisms inhabiting it. Planting herbs will enable multi-sensory cognition by tasting, smelling, touching them. It will be a contribution to the presentation of properties and information about herbal medicine. The garden may be equipped with weather stations. These can be simple measuring instruments, such as thermometers, or rain gauges. Such observations can be recorded in the weather calendar. This may shape children's inference making ability and develop their cause-and-effect thinking. Taking part in group observations and experiments may help children acquire the scientific language, teaching them to use correct nomenclature with reference to processes and phenomena.

Gardens may be a continuation of nature corners where seedlings for the garden can be grown. Native species are to refer to the traditions of the region, favor the formation of the concept of a small homeland. Educators equipped with knowledge of gardens and possible didactic applications will be prepared to introduce such activities in institutions.

4. Fairy tales in the garden

Irena Borecka perceives gardens as potential places for fairy tale therapy. She believes that texts about gardens will evoke more experiences when read surrounded by plants.

² Carbon footprint (CF) is “the total amount of greenhouse gases emitted over the life cycle of a product, by an organization, event, product, or by an individual over a life cycle.” This is currently a very important criterion for ecological attitude.

According to I. Borecka, part of the therapeutic activities proposed in the “Magic Garden” programme should take place in a garden. According to the author, gardens may contribute to reducing stress levels, may enhance aesthetic experiences and facilitate catharsis (Borecka 2010, 97). Benches and resting places located in gardens will be conducive to adapting gardens to leisure activities such as reading or places of rest³.

A significant example of a fairy tale for children that fits into the theme of gardens is *Pomelo*, written by B. Ramon. This is a series of stories about a small, pink elephant living in a garden under a dandelion. Other examples of books whose actions take place in gardens are Ch. Björk, L. Anderson, *Linnea w ogrodzie Moneta [Linnea in Monet's Garden]*, *Rok z Linneą [Year with Linea.]* Reading books in which the species of plants grown in the garden are mentioned will make it easier to understand the work. Among the books on garden and gardening, one may point out: *To pestka! Czyli ogrodnictwo dla dzieci [Easy Peasy! Gardening for Kids.]* It deals with recycling, ecological approach in gardening, healthy food. It contains numerous suggestions for activities that can be undertaken in gardens, in corners of nature, or at home. It is inspiring to set up a garden in a jar, build houses for insects, advice on drying leaves. The author encourages keeping a nature diary. Another example is *Franciszek z kompostu [Francis from Compost]* by S. Cechov, or *Ogródek na Twoim oknie [Garden on Your Window]* by R. Effraimsson, P. Beckman.

Not only literature oscillating around the subject matter can be read in gardens. The garden is a place to read any literature.

5. Calculations and designs

Gardens may be helpful in design learning. Both at the stage of setting up a garden and when planning the garden layout. Areas need to be measured, the spacing of plants

³ Green colour – relaxes, supports concentration, calms down, gives a sense of security.

needs to be planned, the number of seedlings and seeds needed should be calculated. Drawings with garden designs are made on a scale based on measurements in the field. This requires calculations. Students together with the teacher must plan the place, materials and costs before starting the activity. The garden shapes the spatial imagination, taking into account economic conditions.

6. Therapy in the garden

The need for contact with nature, return to nature is noticed in difficult situations. Widespread digitization, overstimulation, fatigue, factors related to technical and civilization development make many people look for solace. Being among trees and shrubs promotes positive impressions, while detachment from the urbanized environment, improves physical and mental condition. The natural environment introduces aesthetic values that have a positive effect on the expression of one's own personality, activating abilities and talents. The benefits of contact with nature have resulted in research and development of hortitherapy (garden therapy). Hortitherapy deals with the relationship between man and garden, explores the possibilities of improving the human condition in the physical, mental, social and cognitive areas. Hortitherapy is classified as an unconventional method of therapy. It uses plants to improve the physical and mental condition of man. Two forms of garden therapy have been distinguished: passive and active. The passive therapy consists in walking, multi-sensory cognition through watching, smelling, touching and aesthetic experiences related to staying in the garden. Active hortitherapy is participation in work such as planting, sowing, weeding, watering, and harvesting.

In Poland, there are gardens used for therapy. An example is the Therapeutic Winter Garden at the Priest Jerzy Popiełuszko Nursing and Care Facility in Toruń, the Therapeutic Garden at the DPS in Niesielsk, the Therapeutic Park at the residential home in Ruskie Piaski, the Hortitherapy Garden

in Jadowice Mokre (Zawiślak 2015). Contact with nature, both passive and active, improves physical and mental health. Communing with nature in gardens shortened the time of hospitalization and reduced the amount of medication taken. Gardens protect against excess stimuli, chaos, allow people to rest. At the same time, gardens stimulate concentration and interest in the world.

In the United States, in 1973, the American Association of Horticultural Therapy was established, which promotes garden therapy and grants hortitherapy qualifications. In Poland, it is possible to gain knowledge about garden therapy at postgraduate studies. Hortitherapy combines art therapy, ergotherapy, psychotherapy with gardening knowledge. Sensory stimulation of the senses improves memory, cognitive, language and social skills, affects muscle work, coordination, balance and endurance. Gardens are places that still amaze us positively and whose potential, despite many years of their history, has not yet been fully explored.

7. The role of gardens - research

In the opinion of researchers dealing with the issue of school gardens in modern schools, gardens should coexist with modern means of communication. The role of gardens is perceived as a teaching aid of timeless significance. The contemporary garden is to differ from the school plots designed in the mid-twentieth century preparing students for work. The school garden is to be a place for conducting research activities, field observations and experiments. It is to serve environmental education, performing educational functions, shaping aesthetic, cultural and zoological values. Zoology can be described as the science of "... the protection of the natural environment (biosphere) against the destructive scientific and technical effects of man" (Łukomski 2000, 33).

Selection of species in school gardens may support the culture of the region by

referring to the tradition of shaping gardens and promoting native species (Kowalski and Grott 2015). Studies on the impact of gardens on the development of preschool children show that teachers underestimate the possibilities of gardens. Over 60 per cent of the surveyed teachers believed that gardens perform primarily an aesthetic function, not noticing their impact on health, as well as biological, emotional, social and cognitive development of children (Kruszko 2013). However, these subjects considered the vegetation of gardens to be an important teaching aid. In the research of the Billimore team, it has been proven that people with learning problems learn better and easier outside the school building (Kruszko 2013). It was pointed out that outdoor activities enabling observation and experience stimulate cognitive processes and facilitate learning. Classes in gardens can therefore be a form of prevention and therapy for school failures (Kuleczka-Raszewska 2019).

T. Ordza proposes activities in gardens in the form of interdisciplinary projects. Due to the variety of garden activities, students and teachers can adapt them to individual predispositions to support comprehensive development (Ordza 2018).

T. Waliczek and J. Zajlicek in research conducted in 1999 showed that children who spend time in gardens demonstrate a higher level of caring behaviors, they are more willing to take care of others, help the weaker and they are more responsible, independent, accurate and persistent. Moreover, development of social competencies and reduction of aggression was observed. An increase in motivation to acquire knowledge was also noted. Being in a natural setting, among plants, relaxes children and arouses their curiosity, says S. Kaplan (Krzempek 2022, 69).

Garden activities promote sensory integration. Information arrives through the sensory organs, facilitating cognition. Gardens abound in factors stimulating the senses, awakening memories, conducive to learning. Research confirms that human brain is most

active during physical activity and independent exploration of the environment (Dudkiewicz, Krupinski, and Stefanek 2019, 7).

Children are eager to explore their surroundings. The children who grew vegetables and fruit in gardens demonstrated beneficial changes in three areas: “knowledge about vegetables and fruit, greater willingness to try vegetables and fruit, preference for vegetables and fruit in adulthood” (Baj-Lieder 2021, 50).

In the research conducted by A. Kosobucka, students pointed to the dominant leisure and relaxation function of gardens. They emphasized that they liked to rest there, spend their breaks there and that they were able to calm down there. According to this researcher, benches in gardens serve students during breaks and in their free time. Benches are also used to conduct classes in various school subjects.⁴ By emphasizing the relaxing function of gardens students clearly indicate their need to relax. Green areas are associated with relaxation and rest. The smell of soil, flowers, herbs, the sounds of rustling leaves, insects, birds, the colors filling the garden, create in schools enclaves that are rich in stimuli. Gardens are places that are essentially distinct from other school spaces. Students wish to have an intimate place where they could feel at ease. Constant control and lack of trust on the part of school results in the fact that students do not have a place of isolation, free of monitoring and supervision. School gardens create opportunities to relax, see things in a different perspective, cope with the excess of stimuli.

In a survey conducted by Grott, (Kowalski and Grott 2015) 86% of respondents said that their school did not have a school garden. Among the institutions surveyed by R. Michalak and T. Parczewska, only 13 (8.33%) had a school garden (Michalak and Parczewska 2019, 133).

⁴ Chromotherapy is a method concerning the use of colors to treat particular diseases. A mechanism of the effect of specific colors has not been thoroughly examined yet.

The tasks of universities educating students in pedagogical faculties include preparing them to conduct science classes. At one of the universities in Poland, workshops on forest pedagogy are conducted⁵. Under the same title, a thematic issue of the scientific journal of the Pedagogical Forum was published (Paluch and Klimski 2022). However, the thematically close pedagogy of the garden has not yet developed within the framework of academic subjects at pedagogical faculties.

The thematic issue of the scientific journal Pedagogical Forum was published under the same title. However, thematically close garden pedagogy has not yet developed within academic subjects.

Students should acquire the ability to recognize plants and be prepared to conduct science field classes with children. In kindergartens and at the stage of early childhood education, the recommended form of learning about nature by children is observation, experience and experimentation.

Students would be happy to use a school garden during science classes with children. They appreciate the opportunity to conduct observations and experiments. Preparation of students to conduct such classes should take place in natural environment enabling them to perform practical activities and recognize plant species.

Most schools do not have a garden. Students who want to conduct classes in gardens will face the task of initiating such activities and setting up a garden. Such preparation could take place in gardens established at a university, intended for students of pedagogical faculties for didactic purposes. Below is the proposed design of a garden intended for students (Fig. 1).

⁵ The workshop called Forest Pedagogy – getting to know and experiencing oneself in nature, appeared for the first time in the study program at the Cardinal Stefan Wyszyński University in Warsaw, in 2021/2022, covering both full-time and evening studies.

8. Examples of gardens

Examples of activities confirming the growing interest in gardens. Wrocław is a city that has joined in the initiative to encourage schools to create gardens. As part of the FoodSHIFT 2030 project, seven gardens were created at schools and kindergartens. The partners of the FoodSHIFT 2030 project are: Wrocław University of Environmental and Life Sciences and the Foundation for Sustainable Development. The project aims to promote local agriculture and organic food. It is a part of the city's climate policy. As part of the program, community gardens are also created.

A flower garden was created at Primary School No. 17 in Gorzów Wielkopolski. Parents, teachers and students were involved in joint activities in creating the garden. Science lessons are held there.

The nationwide project "Gardens with Taste" is an initiative which started in 2022. Institutions can apply for participation in Elektrolux activities. Using the website, you can vote for the implementation of the project in a specific institution. Gardens will be created in the five kindergartens that will receive the largest number of votes. Over 81,000 votes were cast within 20 days. The aim of the program is to get to know nature, develop pro-ecological habits, popularize vegetables and climate education. Vegetable gardens are presented as places for observation and experiments carried out by children.

Conclusions

Today, there is no recommendation to create gardens as was the case in the middle of the twentieth century. Creation of gardens depends solely on personal involvement and moral commitment of those teachers and students who consciously try to counteract climate changes. Unfortunately, in most schools in Poland, there are either no school gardens at all, or only traces of gardens from the past can be found there. Students face the challenge of conducting classes in gardens, as well as initiating the creation

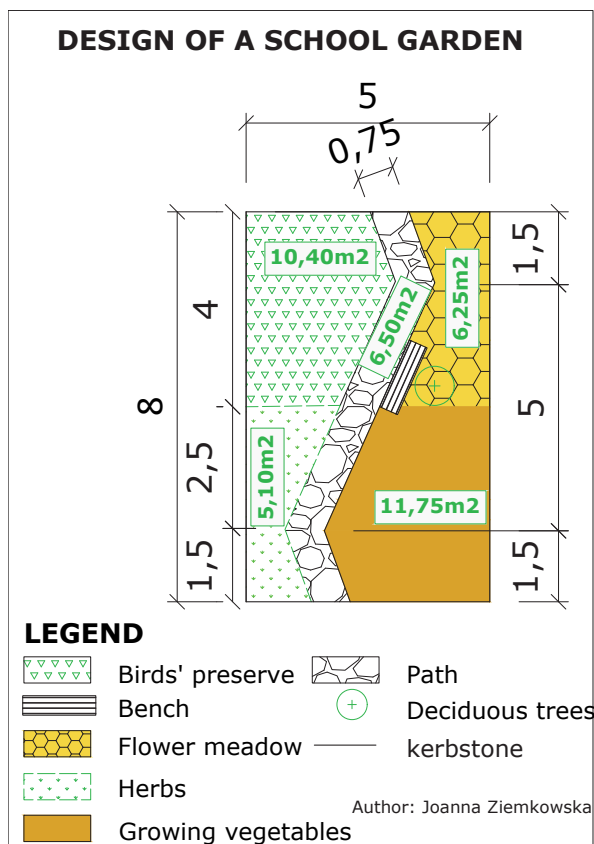


Figure 1. School garden – designed by the author

of such places in the domain of school. In several schools, gardens have been financed from external funds. Their size and character are significantly different from those of several decades ago. The modern garden is an experimental plot enabling direct contact with plants. Students are not to prepare for physical work, but for research and nursing. It is a place of direct cognition through experience, discovery; a space conducive to communication. School gardens can have a preventive and therapeutic function in this aspect.

Gardens teach children patience. The dynamics of change is small compared to the image presented in the media. At the same time, gardens teach humility and show the driving power of students in relation to nature. These seemingly opposite feelings come together. They give

students a sense of agency, because the yield depends on human actions. However, not all factors acting in nature can be predicted, e.g., weather changes, pests. Here, humility towards nature is pointed out. Experiments in gardens help to find man's place in the world of nature.

Even the most beautiful garden designed by landscape architects, perfectly fitting into the surroundings, will not perform didactic and educational functions without passionate teachers infecting students with their enthusiasm, shaping in them an attitude of mindfulness, care and co-responsibility for both the local world and its global image. Such "future educators" can be prepared for their future work by allowing them to discover the potential that is inherent in gardens, at the same time indicating the possibilities of its practical application. A teacher

convinced of the value of the school garden, noticing and understanding the value of contact with plants, can become an initiator of creating such spaces at schools or universities.

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