CONTRIBUTION OF AN NGO TO ENVIRONMENTAL EDUCATION AT A PRIMARY SCHOOL THROUGH THE ´PROJECT GARDEN LABORATORY

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Abstract
In Slovakia, there is a slight increase in public knowledge on the topic of sustainable living, development, and collective responsibility for the quality of environment. The rapidly worsened state of the climate is alarming and a proactive approach for changes in
society´s lifestyle is essential. The non-profit sector of civil society has an important role to play in this regard, often engaging in projects that promote environmental education for children, their parents and educators in schools. This article presents methods for engaging school communities in transforming the school grounds towards sustainable education. Schools often have a generous ground area, yet in Slovakia there is a low quality of green spaces and equipment that could provide stimuli for children and educators in learning and leisure activities. The paper presents an example of good practice at the Mostná Primary School in Nové Zámky (southwestern Slovakia), where a good collaboration has generated a community and created facilities for the development of environmental education in the form of a ´garden laboratory´ with composters, raised beds for growing vegetable, fruit, and herbs. The low-biodiverse lawn has been replaced by a perennial bed, which is now attracting pollinators. The redesigned open space with new site furniture serves as an outdoor dining room and classroom for experiential pedagogy.

Keywords: experiental pedagogy, green infrastructure, landscape architecture, participation, school garden

Introduction

In the former Czechoslovakia, institutional gardens with environmental education and "eco" pedagogy that dates to early 1900s, persisted under the communist era. Specious school grounds were offering even the “gardening” as a mandatory part of the school's curriculum and has recently received backing from the Ministry of the Environment and the Ministry of Education, Youth, and Sport since the 1990s (Duží et al.,2014).
In the last decade, more and more civic initiatives have been devoted to the protection, improvement of green spaces and transformation of public spaces in cities (Slobodníková, Tóth. 2022). One of the well-known civic associations is the Živica organisation, which has been actively involved in environmental education since 2000. Among their important projects related to eco-education are Global Education, Green School, The Garden that Teaches, Hurrah Outside. The organization offers teachers methodologies, training, as well as material support in the implementation and realization of innovative principles in the teaching of environmental topics at schools.
The non-profit sector contributes significantly to nature and landscape conservation in many regions of Slovakia. In some places it complements activities in cooperation with local authorities, in others it replaces their work entirely. At the same time, there is also an increase of public interest in environmental protection, which is facilitated by well-known grant opportunities from several Foundations (Slovenská sporiteľňa, Ekopolis, ZSE, SPP, Pontis, VÚB, Milan Dubec, Slovnaft, Raiffeisen), that support "green" projects. However, the subsidies of these schemes are not set to raise a lot of money, so they are often used by schools and NGOs for small interventions, such as the implementation of tree planting, flower beds, or the workshops, which greatly limits the possibility of overall revitalization of the school grounds. These would often require a complex solution of new hard surfacing, design of sports infrastructure, interactive playgrounds, furniture, which are the most expensive items of revitalisation.
An essential component of the entire educational system is environmental education, and educational gardens have seen rapid growth in the last several years (Duží et al.,2014), currently often supported by the work of NGOs.

In the ever-worsening urban conditions due to construction activity, dedicated areas (hospitals, school grounds) with extensive green spaces are becoming one of the most important urban green structures that have recreational potential to serve the benefit of public and in the development of the green infrastructure concept (Tóth, A.2022).

Material and methods

There is an obvious increase in promoting educational gardens in Slovakia. We can find 32 primary schools (out of 46 together with high schools) enrolled in education programme: A Garden that teaches organised by Živica NGO (www.zahradaktorauci.sk).

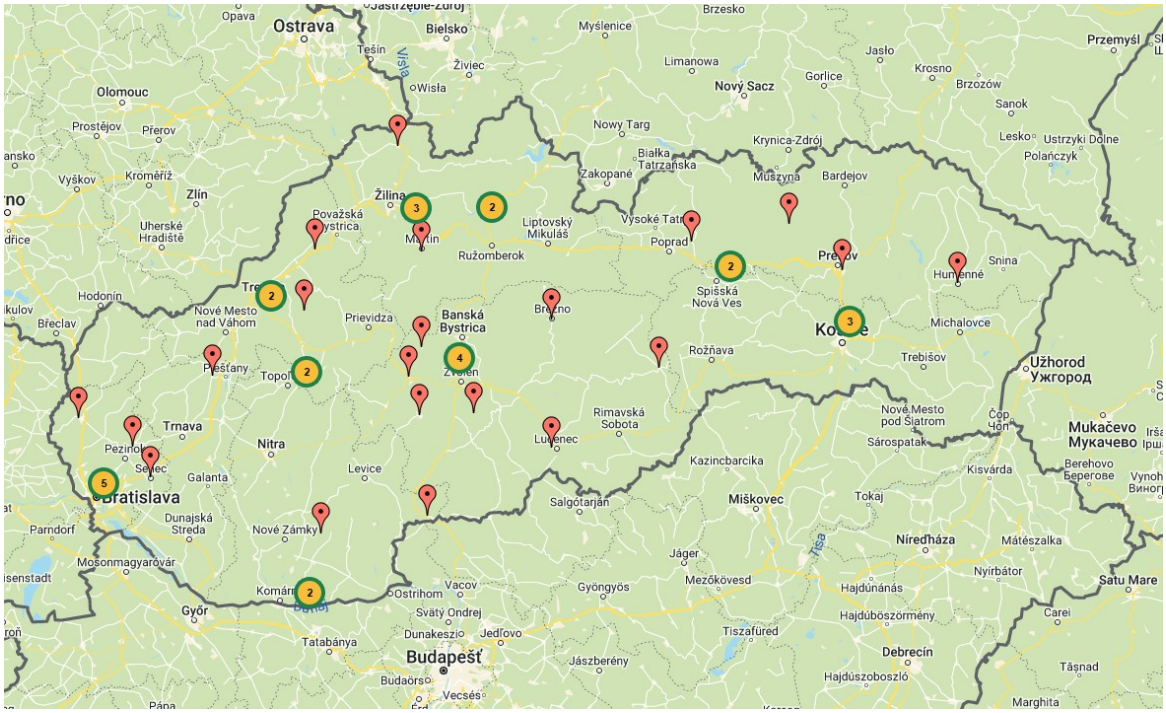

Fig. 1: Map of gardens (primary and secondary schools) that teaches in Slovakia.
Zdroj: www.zahradaktorauci.sk/mapa/

In the town of Nové Zámky (with 37 000 inhabitants), the civic initiative (CI) Tree as a gift (Strom darom) is involved in protection and improvement of greenery as well as the transformation of public spaces. Some of their members were also involved in the founding of the Berek Forest Kindergarten project (www.berek.sk) in 2016. It is dedicated to preschool education in the form of Waldorf and forest pedagogy, which naturally led to the need to continue this type of education for children in primary school after that. This is how the project Živá škola (www.zivaskolanz.sk), which is part of the Mostná state school in Nové Zámky, came into existence. The municipality has 10 primary schools in its administration. The neglected, unused area (0,5 ha greenery of total 2ha plot) of the school ground Mostná has been the subject of the (CI) Tree as a gift, that helps to transform the exterior of the school into a place that will offer possibilities for children to actively spend time outdoors and expand their skills and knowledge in an experiential way.

Activities kicked off in 2019 by a participatory process with the children and teachers at the school in creating “feeling maps”. These were used as a form of data collection, before developing the overall masterplan of the ground. From the evaluation of the “feeling maps”, we identified the places that influenced the participants positively or negatively when being outdoors, as well as a set of elements that were missing for the actors in the school grounds. We have abandoned the conventional process of creating landscape architecture documentation for the moment due to the greater financial requirements for project documentation that would be needed for such a complex re-development. Schools often do not have that extra funding for procurement of this.

Therefore, we went down the path of gradual co-work with stakeholders to form the design in phases. In 2022, an opportunity arose to receive funding for environmental education activities from the state grant scheme ENVIROFOND. (CI – Strom darom) Tree as a gift prepared a proposal according to the wording of the request for proposals, which was intended for the following activities: building new, completing and renovating existing indoor and outdoor spaces used for the purpose of environmental education, training and awareness-raising activities.
Landscape architect a member of (CI) Strom darom prepared a masterplan proposal and budget description for the project of “Garden Laboratory”. A professionally developed proposal based on a participatory process helped in obtaining funding for the implementation of the project.

Results
The aim of the revitalization was to build a "Garden Laboratory" on an area of 700m2, out of which 300 m2 was a paved surface in bad condition, that was replaced with a new permeable material made of stone rubble. The garden laboratory consists of 9 raised beds built of DURISOL components (a durable ecological material) that creates an area of 35m2 for growing vegetables, edible fruit and herbs. The formerly 230m2 lawn has been replaced by an extensive perennial bed with bulbs that significantly enhances the biodiversity of the plot. At the same time 4 trees were planted (Tilia and Prunus sp.), 3 composters, 2 picnic sets and 5 oak seats were installed. The budget of the project was 49 726,03 EUR. The construction works were carried out by the company, the rest was part of the co-work with teachers, children and parents under the leadership of the initiative, which provided the necessary expertise for the establishment of the vegetation types.
By revitalizing the plot, we were able to build grounds for the students' gardening work and at the same time it can be used as an outdoor classroom for teaching multiple subjects as well as giving children a space to spend a meaningful time in the after-school club.
By transforming unused paved surfaces into functional areas that bring benefits are a positive added value to educate stakeholders about such possibilities in built environment.

Discussion
Slovakia is currently experiencing one of needed transformations and that is in children's education, where the so-called curriculum reform is intended to lead to a better overall readiness of children for life in the 21st century.
One of the fields of new curriculum reform is the field - People and Nature, where the main objective is that students are involved in identifying and solving environmental problems and protecting nature. They identify regional and global problems and issues of different kinds and can reflect on them and express themselves appropriately. They are aware that through their actions they can influence individual parts of the environment and themselves (Pupala, Fridrichová, 2022). The fundamental change in children's learning under the curriculum reform will be in engaging them in activities that provide their own experiences and create concepts that they understand and use in meaningful way. Such learning will ensure the development of appropriate attitudes towards nature and its knowledge. Students become convinced of their own competence to explore the world around them and to contribute to its positive change by proposing and implementing solutions in different areas of life (Pupala, Fridrichová, 2022). Here we see an opportunity where “GARDEN LABORATORY”can serve to explore the real experience of growing your own vegetables, converting bio-waste into compost, which is a source of nutrition for growing crops, and thus explore the cycle of living processes.
Design and implementation of the “GARDEN LABORATORY” idea was a targeted strategy rather than a design principle of the project to transform part of an unused area of the school garden into educational environment that promotes human-environment relationships in the context of cultural ecology (Lapka et al., 2012, Tóth et al., 2018). We agree with the authors' statement that educational gardens are extraordinary objects, and environmental education should be the primary design strategy for them.

Fig. 2: Design proposal of “Garden Laboratory” for Envirofond Funding. Zdoj: Ing. Katarína Slobodníková

Fig. 3: Co-planting by kids, teachers and parents of extensive perennial flower bed to enhance biodiversity of the school ground under supervision of landscape architects Slobodníková, Balogová from (CI) Tree as a gift. Source: Lucia Balogová

Fig. 4: Raised vegetable beds ready for planting in “Garden Laboratory”. Source: Katarína Slobodníková

Conclusion

At the local level, active civic initiative or NGO play an important role in building communities and green infrastructure of settlements. By engaging different stakeholders on projects led by professionals from civic initiatives, it brings benefits to the development of the area, while also succeeding in educating different communities on sustainable urban development issues in an experiential way.

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Souhrn
Případová studie projektu "Zahradní laboratoř" popisuje proces přetváření školní zahrady (700 m2), který iniciovala občanská iniciativa (CI) "Strom jako dar" ve městě Nové Zámky. "Zahradní laboratoř" má být zahradou, která učí a je využívána v rámci tematických hodin nebo v mimoškolním kroužku. Na jejím plánování, tvorbě a údržbě se od počátku podílejí žáci, učitelé a rodiče dětí. (CI) vede komunitu k budování vztahu k přírodním živlům nebo udržitelnosti prostřednictvím péče o zelené zeleninové a trvalkové záhony, kompostování a biodiverzity. Dobrých výsledků je dosahováno díky aktivnímu přístupu (CI), který koordinuje proces realizace projektu od nápadu až po jeho údržbu a zajišťuje tak udržitelnost projektu. To znamená, že i malé lokální zásahy s profesionálním přístupem mohou mít významný dopad v širším slova smyslu.

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