

Education in botanic gardens for young children

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Abstract

Early childhood is a crucial period for the formation of human personality, intelligence and social behaviour. Considering this fact, young children should be introduced to botanic gardens. In this paper, educational programmes for young children of the Nezahat Gökyiğit Botanic Garden (NGBB) are looked at and the underlying educational principles of these programmes will be presented.

Key words

Botanic Garden Education, Early Childhood, Environmental Education

Introduction

Today's children are getting disconnected from nature day to day (Louv, 2006). They have little chance to explore nature by direct experiences and according to Louv (2006) this loss is underlined in many emotional and physical problems for them. Botanic gardens, that are generally built in crowded urban cities, can make enormous contributions to maintaining this connection between nature and humankind. Nezahat Gökyiğit Botanic Garden (NGBB) is one of these gardens, which opened in İstanbul, one of the most populated cities in the world.

NGBB is a new botanic garden located in Turkey. The garden is unique in the sense that it is the first and only botanic garden built in a motorway junction. The garden hosts over 150,000 visitors per year and, is the first, and only botanic garden running educational facilities in Turkey. It offers a wide variety of educational facilities such as school's and children's programmes, adult education courses including practical horticulture training and botanical illustration, public talks, exhibitions and so on. However, the focus of this article is educational activities and the perspective of the garden for children in early childhood.

Early childhood is the period from conception to the beginning of primary school at about age 6 or 7 (Myers, 2002). According to Myers (2002) the early years have a great importance because of rapid and dramatic changes in mental and physical characteristics. Formation of intelligence, personality and social behaviour are completed largely within this period. Especially, after age 3 children become independent explorers. So, botanic gardens should aim to reach children between 3 to 6 or 7 years old to contribute to the development of positive attitudes towards the environment. But, in which percent should botanic gardens target young children? If botanic gardens would like to reach young children, they should negotiate with families or schools. The survey done by Kneebone (2006) indicates that 58% of the participant gardens target students between 0-5 ages and 74% of them target families. Findings of the survey show young children are the least targeted group between school groups. Also, it is not possible to say whether targeted family groups are ones with young children or not. Why are preschool aged children the least targeted group among others? It can be considered that it is difficult to reach this age group or the misunderstanding that science is not for young children. However, it should be considered that preschool aged children have a more flexible schedule than children in the obligatory schooling period. Also, scientific process skills begin to be obtained in the early years (Lind, 1996). So, botanic gardens need to reach young children and work on proper programmes that support scientific skills, and environmentally friendly attitudes toward them.

What should be the features of programmes we offer to young children? First of all, as all age groups benefit from hands-on activities, programmes for this age group should also be hands-on. Learning by doing in nature is one of the most natural learning methods that help us to explore our surroundings and to understand the life on the earth. Lind (1996) supports this idea by stating that “Hands-on experiences, which emphasize the process skills of science, are essential if the child is to receive the maximum benefits from science instruction” (p.55). Hands-on activities are an essential part of all programmes of NGBB. Young children, participating in the educational programmes of the NGBB, plant, observe, classify, collect natural materials and create artistic works. Since 2005, 8,911, 3-6 year old children have participated in educational programmes of the NGBB. Sensory participatory engagement with the environment is the key of the success of these programmes for young children offered by NGBB because young children learn about the world through their senses. Lind (1996) suggests making children observe with their senses. As a second step, she stresses that scientific process skills such as classifying, predicting, measuring and communicating results will be taught to young children for the development of scientific concepts. Also Jenkinson (2006) says sensory engagement with the outdoors in the early years helps the development of ethical and environmentally friendly behaviours and attitudes.

Other than content, the pedagogy of the programmes is the other key for success of the NGBB educational programmes. However, Falk and Dierking (1992) state that museum like institutions such as botanic gardens generally aim to teach content rather than trying to increase interest and motivation of visitors or their affective potential. As Falk and Dierking stress it is one of the important points to maximize the affective domain of visitors and it can be said that it is the first step for further content learning.

If botanic gardens want to enhance learning opportunities for young children the other thing that should be considered are the properties of the landscape if it provides young children any chance to explore and to learn or not. Falk and Dierking (2000) mention the importance of physical setting in museum-like institutions like botanic gardens. Similarly Orion (1993) emphasizes the importance of providing an environment in which children can construct information themselves. Danks (2006) confirms this by saying that “...we do not just want them to learn about nature, we want them to learn from it” (p.20). This kind of learning will be related to real life and hands-on and it is valued as long lasting and meaningful learning. Senses should be provoked by our educational facilities and also landscapes. Fortunately Willison (2006) states “... many gardens are increasingly conscious of the need to offer children opportunities to explore their surroundings freely” (pp.2-3). If so, botanic gardens need to consider the developmental characteristics of children in designing landscape and infrastructure, and providing nature play opportunities. As an additional part of landscape, many botanic gardens started to build themed playgrounds for plant-based learning for young children. Recently, NGBB opened the first of this kind of playground, “Discovery Garden”, in Turkey. It was opened on 23rd April 2009. This Garden has been designed for children ages 3 to 9 to teach children about nature and plants as they play. The theme of the garden is “*the importance of plants for other living organisms*”. The garden components, that were shaped by the theme, include a maze made from evergreen shrubs, a tree house, a spiral water feature, a sand box, tunnels made from willow (*Salix* sp.) branches, a balancing roller bridge, agility area, and an activity area for storytelling and art activities. There are some additional toys and equipments like a flower puzzle showing plant parts, musical instruments, a worm puzzle and interactive exhibits like the photosynthesis wall, cactus plant, and age rings of a tree. It will also support their physical activity, social development, and emotional wellbeing through outdoor experiences. On weekends, different educational activities are offered for the targeted group at the garden.

Furthermore, gardening projects can be applied with young children. NGBB started a Children’s Gardening Project in 2006. Although, the project is targeted at primary school students, the annual programme was adapted and applied with a group of preschool

students in 2010. These programmes are valuable because they provide hands on experiences in the natural environment and help children to observe the life cycles of plants, ecological systems and human impact. Positive effects of gardening projects are proved by much research (e.g. Conlon 2005; Tims 2003). Capra (2001) states that developing a garden and using it as a source of food can help people to understand the principles of ecology. Also this kind of project can be helpful for the development of healthy eating habits, because early childhood is an important period for good health and nutrition habits (Lind, 1996). Further plans of the NGBB are to continue these programmes with various age groups and make valuable evaluations on these.

NGBB has already developed many programmes for preschool groups. However, there was a big demand from families whose children do not attend preschool. So, various weekend programmes and workshops that families can participate in are created for preschool groups. "Bird watching", "Art inspired from the garden", "My nature bag", "Paper making", "Art from rubbish", "Experiments in nature", "Maths in the garden", "I am a child, I have rights" and "Nature and origami" are some examples of these programmes. These programmes are applied by experts who work in the environmental education area in Turkey.

Conclusion

Taking everything into account, botanic gardens are important out-of-school science learning sites. By considering the importance of the early years, botanic gardens need to target young children. Young children explore their surroundings by their senses so it is one of the keys of provoking their senses by our programmes and landscape for plant based learning. Also, programmes and activities for young children must have some characteristics. Most importantly, young children learn by doing and active involvement is important. However to be effective other than content, pedagogy is important and we need to consider the affective domain of our programmes. Play is the business of children so it is important to provide enjoyable and playfull programmes for better learning. This may help us to increase plant interest and indirectly may help us to increase positive attitudes toward the environment and to conserve plant biodiversity. Gardening programmes with young children can be applied and this may help them to learn about ecological systems. Children develop scientific process skills such as observation, measurement and prediction at early stages. So, science is for young children as well. Lastly, the NGBB is one of the botanic gardens that try to provide good examples on educational strategies for young children.

References

- Capra, F. (2001). The School Garden: Education for Sustainable Living, *Roots* (23), 21-24.
- Capra, F. (2005). Speaking Nature's Language: Principles for Sustainability, In Stone, M.S. & Barlow, Z. (Eds.) *Ecological Literacy: Educating Our Children for a Sustainable World*, San Francisco, Sierra Club Books.
- Conlon, S. (2005). *Project Green Reach at Brooklyn Botanic Garden: A Case Study of the Summer Program*, University of Tennessee: Master's thesis. Retrieved on May 9, 2009, from <http://etd.utk.edu/2005/SusanConlon.pdf>.
- Danks, F. (2006). Playing Wild, *Roots*, 3 (2), 20-22.
- Falk, J.H. & Dierking L.D. (1992). *The Museum Experience*, Whaleback Books, Washington, D.C.
- Falk, J.H. & Dierking, L.D. (2000). *Learning from Museums*, Oxford, England.
- Jenkinson, S. (2006). Living in Real Time, *Roots*, 3 (2), 9-11.

- Kneebone, S. (2006). *A Global Snapshot of Botanic Garden Education Provision 2006*, http://www.bgci.org/education/global_snapshot_edu_provis/
- Lind, K.K. (1996). *Exploring Science in Early Childhood: A Developmental Approach*, 2. Edition, Delmar Publishers, U.S.A.
- Louv, R. (2006). *The Last Child in the Woods: Saving Our Children From Nature Deficit Disorder*, Algonquin Books, Chapel Hill, North Caroline, USA.
- Myers, R.G. (2002). Role of Private Sector in Early Child Development. In M.E. Young (Eds.), *From Early Child Development to Human Development*. (Pp:257-293). Washington: The World Bank.
- Orion, N. (1993). A Model for the Development and Implementation of Field Trips as an Integral Part of Science Curriculum, *School Science and Mathematics*, 93 (6), 325-331.
- Tims, J. (2003). *Brooklyn Botanic Garden's Children's Gardening Program: Its meaning and impact on adult alumni*. University of Tennessee: Master's thesis, Retrieved May 3, 2009, from <http://etd.utk.edu/2003/TimsJayme.pdf>.
- Willison, J. (2006), Play and the Environment, *Roots*, 3 (2), 2-4.