Built Environment, Children and Natural Habitat. Permaculture Garden Application in School.

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Author's Background

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Summary

Built environment is designed without children's presences and perspectives. Children cannot reach the areas, where they contact with the natural habitat. These areas are open safe places i.e. schoolyard, public park, playground, garden, square, recreational area and urban forest. Thus the relationship among children, natural habitat and built environment is deteriorated.

This paper investigates rebuilding relationship among children, natural habitat and built environment via school garden designed by permaculture design system. The strategy of strengthening this tie among nature, children and built environment is revealed a collaborative platform between children and designer via questionnaire, seminars, workshops and discussions. As a result of implementation, rebuilding the relationship is possible via introducing permaculture method into child education in appropriate time period of childhood.

Background

Today's cities suffer from a major problem that built environment is shaped by adult's perceptions without offering places where children can conduct to natural habitat. Başal (2005, cited in Talay et al., 2010) underlines this problem as; nowadays children insulated from nature when they grow, especially in bigger cities. Due to design without children's presence or unplanned urban settlements, safe open places are limited. Thus children bear spending their time in the interior spaces. There are some organizations that investigate the relationship between children and nature such as TEMA[2] in Turkey and Playday[3] in UK. The results of these researches support the view that children grow without awareness and love of nature. The reasons behind are: security fear of parents, lack of safe open spaces and lack of interest to nature. In any case, children suffer from deteriorated and ignored relationship with natural environment. This is the worldwide problem of today.

Louv (2008: 45) defined this problem as the "nature-deficit disorder" which "describes the human costs of alienation from nature: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses." He adds, even if it is not a medical disease, the previous studies show that human manner can be changeable in the city because of the absence or inaccessibility to outdoor spaces, such as parks and also it can be basis of "high crime rates, depression and other urban maladies (Louv, 2008: 45)." As shown each age group can be affected from this problem. However, especially children need to have relationship with nature. Kılıç (2014) states that "children connect to nature to learn with nature, spending time to play and needs of love and the cause of dependent on nature for their development is this relationship that they build (2014: 12)."

Nowadays, for children especially who grow up in cities, it is hard to get opportunity to establish one to one relationship with the natural habitat. The areas, that provide curious and awareness about natural habitat to these children, are the playing-learning areas placed in the built environment. In this case, this paper builds a framework for definition of the natural environment for reaching the natural habitat. This framework includes open safe play areas, where children can contact with nature in the built environment, rather than wild natural habitat itself.

If contributing of the natural elements to the child's development will be taken into consideration, natural elements are essential to include in playground design. Therefore, this paper reconsiders the design of children's play areas. The method of bringing the concepts of children, play, nature and built environment together is selected implementation of permaculture play-learning-school garden as fieldwork.

In this case study, the permaculture design system is an essential strategy that provided children to learn from nature and make children closer to the natural habitat. The first reason of selecting permaculture design system as a strategy, is its philosophy that assesses the humanity as part of nature rather than seeing it as owner (Mollison, 2009). The second reason is the ability of this system which provides children to equip skills of producing their own food and sustain lifecycle without any damage to nature. These are the strong conceptual bases for children if they consider as adults of future generations.

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[2]To learn more about this study see "Toprak dersem çık" project in http://www.tema.org.tr

[3]To learn more about this study see "Play England joins ground breaking movement to reconnect kids with nature" survey in http://www.ncb.org.uk

Case Study: Practices on Nature Education in Karacaoğlan Mahallesi Ortaokulu via Permaculture Design System

The case study includes fieldwork (including workshops), questionnaire, seminars and discussions. These parts of case study are designed to support and feed each other, when making children closer to nature, learn about natural habitat and learn from natural habitat.

The students between nine and twelve years old which constitute The Environment Protection Club in the Karacaoğlan Mahallesi Ortaokulu (Secondary School of Karacaoğlan District) participated to the case study. The club is composed of 46 students; among 45 of them took consideration into analysis. The methodology of case study included two data collection tools of "participant observation" (De Walt and De Walt: 2002: 1) i.e. fieldwork and questionnaire.

Workshop 1: We are Designing School Garden Together

This workshop consisted of two sections. In the first section the game was played via data show which included slides of waste materials and their reusing ways. The game began with appearing a small piece of the each waste material. Then the facilitator asked two questions: 'what is it?' and 'what do we use it for? The answers are collected from children randomly. Finally, whole picture appeared with reusing way of waste material (Figure 1).

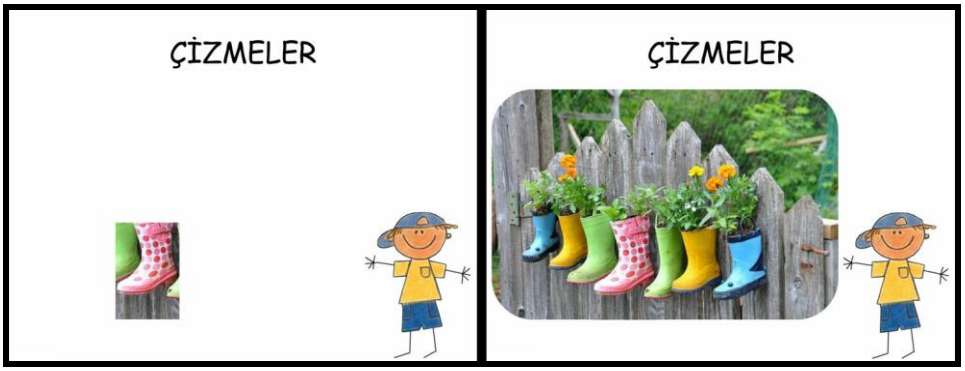

Figure 1. Slides of the game that show the way of playing

In the second section of the workshop, the pictures of their imagined school garden are asked from students. They used white paper and colored pencils to describe it. At the end of the workshop the pictures collected (Figure 2).

Figure 2. Products of Workshop 1

For analysis of the pictures in the second section, the list of key elements was created. The key elements chose from permaculture design element. After that, the pictures were skimmed in order to find any new element. The new ones added to the list. The key elements were categorized into two groups: highly desired which were drawn very often and somewhat desired which were rarely ones. They were assessed as the design tools for new school garden (Table 1).

Table 1: Key elements pointed out by the design drawings of school garden

Highly Desired		Somewhat Desired	
Water feature	Animal and animal shed	cages	Cinema
Fruit tree, tree, bush	Tree house	Insect	Cafeteria
Grass and flower	Playground tool	Fence	Use of recycle materials
Sun	Vegetable and fruit bed	Pharmacy	Sculptures

The objective of this workshop was making children to think differently for their school garden design and learn about imagination of their school garden. At the end of the workshop children changed their presumptions about school garden.

Questionnaire

The questionnaire is composed of totally twenty open-ended questions including four parts: information about his/herself, information about his/her home and environment, information about his/her school, information about the playground in his/her district. The object of the questionnaire was learning more about children and their dream about school garden.

As a result of questionnaire, it is observed that most of the children have tendency to connect with nature. On the other hand, children suffer from insufficient play area. They are willing to learn with nature and play with nature; however they could not reach the nature because of the built environment.

Workshop 2: Permaculture Methods Seminar

The workshop was included two sections. In the first section, the permaculture design system was introduced to children within the lecture. Later, school garden project that designed considering the results of Workshop 1 and questionnaire was introduced, and the feedbacks of children about permaculture school garden design were taken through interviews.

The lecture was about the philosophical background of permaculture design system, including permaculture ethics, pattern understanding and zoning. Moreover, the technical methodologies of permaculture design system such as; the edge effects, water managements, composting, hugel culture, energy consumption, plant and animal systems in basic expression were also defined.

Workshop 3: Tree Planting Workshop

In this workshop children planted trees in the schoolyard. Totally 43 saplings were dibbled. They were composed of 20 laurels, 10 plane trees, 10 crab apple trees, 1 sophora, 1 China tree and 1 pine tree. Each child who participated in workshop, with groups or individually, owned and took responsibility of a tree (Figure 3).

Figure 3. Group working in Workshop 3

Saplings were dibbled according to permaculture design methods. The mulching method was shown to the children. This workshop was essential to inspire children to desire their school garden and also it was the first stage of the base for garden implementation. Another importance of this workshop was the first exercise that children faced to permaculture design methods in implementation area. Additionally it was essential to provided children to take responsibility of elements of natural habitat.

Workshop 4: We are Building School Garden Together

This workshop was the major step to complete permaculture learn-play garden. The project was included three raised beds, an herb spiral, an outdoor classroom and a small raised bed. The elements of garden were designed by permaculture design methods.

In the Workshop 4, children planted 76 vegetable seedlings including 15 cucumbers, 15 peppers, 15 tomatoes, 15 eggplants, and 15 chili peppers and 3 fruit seedlings including strawberry in the rise beds. Five cucumbers, five peppers, five tomatoes, 5 eggplants and 5 chili peppers seedlings were shared to each group. The logic of combining the sibling plants was introduced to each group of children and the seedlings are planted according to this logic (Figure 4).

Figure 4. Results of rise beds

At the beginning of the workshop another permaculture design method i.e. seed balls were taught to children. It is a method that used for avoiding deforestation. Therefore they used for providing vegetation of the garden by throwing them. This workshop provided children to own a garden which they can care of it (Figure 5).

Figure 5. The permaculture garden in May and July

Conclusion

In nowadays city, children are growing without ability and knowledge to produce their own food. There is nearly no place to get a chance of practicing or observing a plant growth in built area for children. Therefore, it cannot be waited from this generation to demand or understand organic farming.

This study shows that children can be adapted to strengthen relationship between nature and them without relying on his/her socio-cultural background, family factor, and natural-built environment that he/she has grown. If they have a chance to own a garden they have energy and ability to maintain it. Thus, as an architect opinion, the buildings should handle with their surroundings and garden in harmless way to nature. There should be a collaborative platform including user, architect, interior designer, landscape architect, urban and regional planner and permaculture designer to design a new environment or building.

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