

Thought Question: Can outdoor learning environments improve children’s learning?

Article Name: Learning Environments for Children in Outdoor Spaces

Subject Area: Outdoor learning spaces

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Abstract: This study focuses on the contributions of the outdoor learning environment to children’s learning processes and on the design of outdoor spaces that are of high quality and align with children’s developmental learning processes. Children are affected by their environments and their environments help shape their activity, experience, behavior, and learning. The role of the outdoor environment is important in the support of active and ongoing learning experiences. Purposefully designed outdoor spaces that have non-standard equipment offer children distinct activities and opportunities, including learning through movement and play. Linking outdoor learning to the natural environment necessitates use of more natural than artificial elements, providing experience with nature and the opportunity to interact with the natural habitat. A reported finding is that development of knowledge and achievement is increased through learning in outdoor spaces. A key concept of the article is that, “The best and most permanent type of learning is learning by experience.” p. 849.

Keywords: Outdoor learning environments, Child-environment relationships, Learning through play, Learning-outdoor space relationships

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Learning Environments for Children in Outdoor Spaces

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Abstract

Learning continues permanently from the start to the end of life. During this period, there are many factors that help learning. Considering the learning process in the childhood, play is the best communication and the most natural learning environment for children. Play recognizes and develops child's talents and creative potential; increases linguistic, mental, social, emotional, and motor skills; provides learning opportunities through trial knowledge and experience that will be required throughout their lifetime. In this way, learning can be realized permanently. Outdoor spaces are the best play environments for children. These areas offer opportunities that are not found in indoor spaces and physical environment contributes to children's learning with owned affordances. Thus, outdoor spaces designed for children are very important. These outdoor spaces will be more meaningful and useful when they contribute to children's learning. This paper primarily focuses on the concept of child-environment relationships, learning environments, and discusses the contributions of the physical environment to children's learning. It describes with examples what a learning environment is, how to provide children with physical environments for learning, and which environmental characteristics contribute to learning. In addition, the paper explains the importance of designing learning environments and the design of these environments. In this way, the paper will give clues to the designers who design outdoor spaces for children that are of higher quality and that will contribute to the learning process of children. Consequently, it will show the importance of outdoor environments for children in education and point out the issues of learning with play and learning environments.

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Keywords: Learning environments, child, affordance, physical environment, outdoor spaces;

1. Introduction

The environment is an essential element for human beings. The environment around children has an important role on their development. According to psychologists Bloom and Deutsch, especially in their early childhood children's environments and experiences have an important effect on their intelligences and developments. Working on children's environments, Clare Cooper Marcus (cited in Loebach, 2004) claims that "children are more deeply affected by the environment than any other age group".

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As soon as human beings starts to develop in their mothers' womb, they become sensitive to their environment. And after they were born, the stimuli that they receive from their environments influence their physical, cognitive, social and emotional development and learning. For it is not possible to think of a human being as a separate entity from his environment. An individual is both in the center of his environment and is an element of that environment. Accordingly, he is both affected by his environment and affects his environment with his activities. He shapes his behavior in this way. Therefore, the environment and behavior are interrelated and the physical environment affects behavior and learning with different affordances that it has (Acar, 2009).

Based on what has been said so far, this study will emphasize primarily the importance of the notions of environment and learning environments that influence especially the development of children and then the study will touch on the contributions of the physical environment to the learning process of children. Furthermore, given the effects of the outdoor learning environments for children on their learning, the study will also deal with the design of such spaces. In this way, the paper will give clues to the designers who design outdoor spaces for children in creating playgrounds that are of higher quality and that will contribute to the learning process of children. Consequently, the study will unveil the importance of the environment in educating children and will draw attention to the issues related to learning by playing and learning environments.

Disciplines of different areas of interest make contributions to the design of play environments that support children's learning. These disciplines are development and child psychology, early childhood education research and environment-behaviour (Loebach, 2004). In order to design spaces for children, one must first know the child, know about the nature of his relationship with the environment and understand the importance of this relationship, know about the needs and demands of the child and his developmental process, and evaluate the opportunities that the environment offers to satisfy the child's needs and demands, and only then should one create spaces in accordance with the design principles. At this point, it is necessary to discuss the following notions during the process of designing outdoor learning environments for children.

1.1. Learning

In the past, learning was considered as "a passive activity" and learners as "empty organisms that incidentally react less or more to stimuli". This perception is within a deterministic model which suggest that specific learning activities or responses are produced by bringing in specific stimuli in the learner's perceptual environment. However, the individual's intent has not been taken into consideration in this interaction. If this model had been absolutely accurate, then all children would have learned the same things with the same method even if their individual competences and capacities were different. The advances in learning processes and learners show that it is not true. According to Piaget, children are active participants in their learning processes. Later studies made by child psychologists have also indicated that even newborn babies perceive the stimuli around them. Today the prominent view is that childhood is a time period which consists of active and continuous learning, which is started and managed generally by children during the play, and which is influenced by different environmental factors (Loebach, 2004). Thus, the role of the environment is important in this process.

1.2. The child-environment relationship

Issues regarding children's experiences with, and needs in the environment can be found in the studies of the disciplines of ecologic psychology, developmental psychology, and environmental psychology. Of these, especially the discipline of environmental psychology deals with issues of perception, cognition and social learning between human and environment. The best concept in evaluating the child-environment relationship in the discipline of environmental psychology is the theory of affordance which refers to the functional opportunities and elements that the environmet offers (Acar, 2013). Children carry out outdoor activities according to the affordances of the environment and their aims, and as a result of these activities learning is realized. For physical environment affects human behaviour (Proshansky et all, 1976; Day and Midbjer, 2007), enables children to know themselves during the childhood years, (Francis, 1997), and "outdoor spaces have been neglected educational areas" (Francis, 1990 cited in Jones, 1997). Children become socialized and learn about the environment as a result of their experiences in the physical environments (Francis, 1997). For this reason, by considering the importance of the outdoor spaces to be created for children, it is necessary to design environments which will have equipment that are not standard and which will offer different activities and learning opportunities.

Children's experiences with the nature and environment appear to be in three different types of use. These are direct, indirect and symbolic or imaginary. The formation of personality and character in childhood is connected with these three levels of experience and the three modes of learning in childhood (cognitive, emotional, moral). Cognitive development refers to thinking and problem solving skills; emotional maturity focuses on the emergence of feelings and emotions; moral development emphasizes the appearance of values, benefits and moral aspects (Figure 1) (Kellert, 2002).

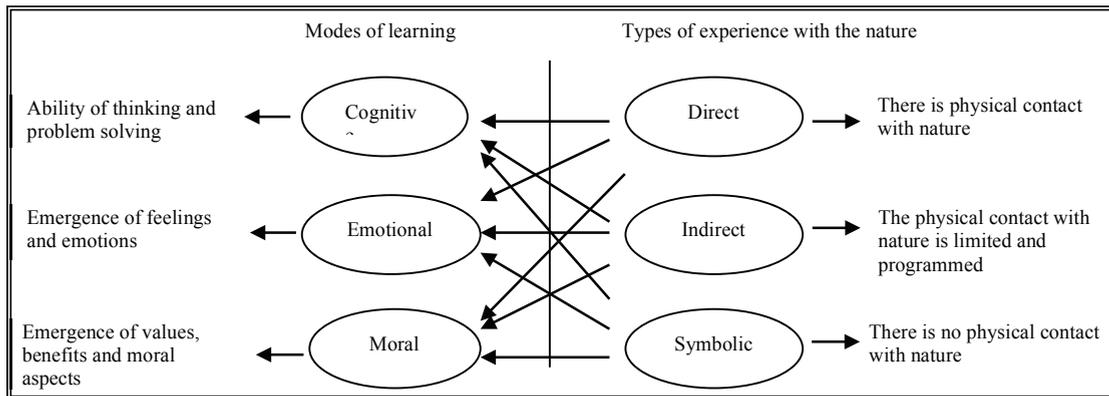


Figure 1. Types of experience in nature and modes of learning in childhood development (Adapted from Kellert, 2002) (Acar, 2009).

As seen in Figure 2, the three types of experience contribute to the cognitive, emotional and moral learning modes of children (Acar, 2009). Of these, the one that offers most opportunities is the direct experience. It is so because it enables learning by touching, seeing, hearing and experience. In order to learn about the environment children need actively use and explore the environment (Francis, 1997). In this case, the movement-learning relationship comes into the agenda.

1.3. The movement-learning relationship

Movement is important for both perception of the environment and physical development. Yet, today children spend most of their out-of-school time at home. In the past, children went to school on foot while today the majority of children go to school by school buses or by their own cars. The reasons for this are the distance between home and school, security concerns, parents' protective behaviour towards their children and comfort conditions. Security is an important and primary concern; however, the interaction with the environment which is lost during transportation must be compensated. To do this, children need spaces where they will be able to use the environment directly in the breaks between classes and in their out-of-school times.

1.4. Learning by playing

That plays in any environment and especially outdoor spaces have an important role in the life and healthy development of children is an unquestionable fact. Furthermore, child specialists also accept the fact that play has an important role in facilitating the learning process. For the best way for a child to get information is practice rather than theoretical instruction (Loebach, 2004). Plays provide opportunities for such practices. Depending on the type of play, the activities, repetitions, and observations both support a child's physical development and contributes to his cognitive and social development. During the play, children should be away from parents' interventions. Because of the fact that children explore new things, imitate adult behaviour, test their capacities, and therefore widen their worlds when they are free in their plays (Loebach, 2004). Many studies on this issue have shown that play has important effects on child development and learning. Viewed from the environmental design perspective, play is a very useful activity for children, and designing spaces which will be suitable for children, of good quality, preferred, used for a long time, sustainable, and which will contribute to children's development and learning is a

very important issue.

1.5. What is the concept of “learning environments”? Where are the outdoor learning environments?

There are two main activity categories in the concept of learning environments. One of them is the formal activities managed by teachers within the confines of the school curriculum, and the second one is the informal activities realized primarily by children according to their own preferences. Both types contribute to physical, cognitive, social and emotional development of children (Loebach, 2004). This paper will focus more on the learning environments realized outdoors by children’s play activities. Among such spaces are the activity areas which will improve children’s physical development and skills according to their abilities; observation, exploration and adventure areas which will contribute to their cognitive development; areas that will improve their creative potential and help them introduce new products; areas which will support their social development and which will give them the opportunity to be with others in the society; and areas where they will be able to get information about living things, life cycle and environmental events.

1.6. The education, learning and environment relationship

The issues of the role of environment in education and environmental education can also be evaluated in the learning environments. “Environmental education contains such processes as informing, consciousness-raising, warning, balancing, development, protection, etc. and aims to create behavior in humans towards these. It also targets the recognition and discrimination of the values, attitudes and concepts related to the biophysical and social environments of human beings”. During the Conference on Environmental Education held in Tbilisi in 1977, it was emphasized that “a successful environmental education should make a human being more aware of the environment in which he lives, more responsible, more knowledgeable, more experienced, more skillful, and more participatory” (Güler, 2009).

“If you are thinking a year, plant a seed. If you are thinking a decade, plant a tree. If you are thinking a century ahead, educate the people” (Davis, 1998). These lines taken from a Chinese poem show the importance and value of education. Environmental education is finding solutions to environmental problems and issues in democratic ways with children, teachers and society standing together. This is an interdisciplinary circumstance. Environmental education is not an alternative; it is a way of thinking and a practical way (Davis, 1998). The aim of environmental education is to make human beings gain an understanding of the ecological balance and their own roles in this balance; to enable them to develop ideas about how to live together in harmony with the planet; and to make them gain the necessary skills needed for an effective and liable participation (Güler, 2009).

Early childhood education and environmental education are compatible with each other (Davis, 1998). Because the information and habits that an individual acquires in childhood will also be effective in adulthood. Furthermore, such activities as playing in outdoor spaces with water, sand and mud that enables exploration, and collecting fallen leaves, creating living spaces for birds, ants and lizards, etc. are the necessary practices to develop a sensitive and responsible attitude towards the environment (Davis, 1998), and we need to offer such opportunities to children.

The best and most permanent type of learning is learning by experience. And outdoor spaces offer different opportunities to children for environmental experiences. The bond created between the child and environment during such experiences will make children more sensitive towards the environment. This will make a major contribution to children to be environmentally conscious individuals in the future.

In their study, Gülay and Ekici (2010) analyzed the aims, gains and concepts in pre-school curricula in Turkey in terms of environmental education. They found that among the aims in the pre-school curricula, the psychomotor and language development areas did not have any aims and gains about environmental education. Besides, the aims regarding the environment in the social-emotional, cognitive and self-care skills areas constituted only 25,9% of the total aims. They also found that the gains in environmental education constituted 15,5% of all gains.

In another study carried out with the 6th, 7th and 8th graders in Turkey, students were administered a test that included the issues of environmental problems and environmental pollution, animals and plants, energy resources and recycling, human-environment relationships and natural disasters, atmosphere, hydrosphere, lithosphere, ecosystem, biome, and food chain. However, the findings showed that nearly half of the questions were answered wrongly. In addition to this test, an attitude scale was developed for the same group for the purpose of assessing their thoughts and feelings about, and attitudes towards, the environment. The findings showed that students were

not knowledgeable enough in terms of environmental attitude (Atasoy ve Ertürk, 2008).

If we look at it from educational point of view, this lack of information and attitude may be stemming from the inadequacies in the curricula, or from the fact that lessons are not practical but theoretical, or from the inadequacies in the teaching methods. However, this should not be seen as an inadequacy stemming only from the system of education in schools. The interaction between children and environment in the out-of-school times is also important. Because many studies stress the importance of playing in outdoor spaces in childhood, experiencing the environment, learning by seeing, touching, hearing and feeling. Experience and information obtained in this way about life and environment are also vitally important. Therefore, if you look at the issue from the point of view of landscape architecture, which is the present author's area of specialisation, the importance of outdoor play spaces to be designed for children is manifested. The important thing in such areas is to contribute to children's learning while meeting their need of play.

2. Designing outdoor learning environments for children

It is necessary to pay attention to the following three constituents when designing children's environments (Loebach, 2004):

- Children's perception and interpretation of the environment,
- The effects of the physical environment on children's behaviour,
- The motivations behind children's environmental interactions.

Research has shown that children's environments must consist of the four environments given in Figure 2 (Min and Lee, 2006, cited in Acar, 2009).

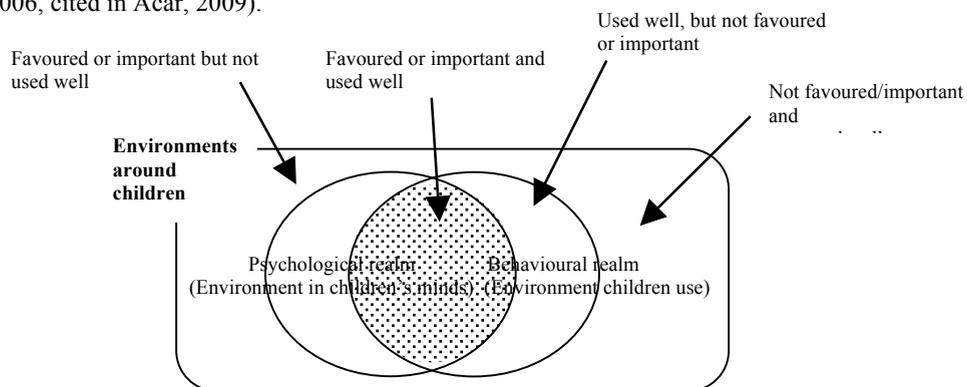


Figure 2. Settings for psychological importance and actual use

In the outdoor spaces that are designed for children, the areas shown in Figure 2 are ideal areas, and of these areas, the psychological realm and behavioral realm partly overlap, and this overlapping part may create the most preferred, important and much used areas. For this, one must know the child, what he wants, and what he can do in different age groups. After this, the data about the space to be designed and the opportunities that the space offers should be evaluated. The next step is, depending on the types of activity that children will do, to create spatial organizations in the area to be designed. At this point, the designer should take into consideration the kinds of contribution that the activities to be suggested and the equipment and materials for these activities will make. Furthermore, children can also be incorporated into the design process. For "human beings become heavily attached to the environments to whose formation they contribute; as a result, they become better protectors and managers of the environment, and therefore vandalistic behavior is reduced" (Martin, 2008).

While designing outdoor spaces, designers must use natural materials by considering the fact that outdoor apaces and especially the natural areas have positive and important contributions to the learning and development of children (Acar, 2009). For while such natural materials as plant parts, water and sand can be changed and reshaped, artificial materials offer only limited opportunities. However, such natural materials must be suitable for functional use by children as well as being visual elements. In other words, they must offer direct experience opportunities. Examples of outdoor learning environments for children are given in Figures 3, 4, 5, 6, 7.



Figure 3. Environments with animals help children learn about them (a-Paris, France b-Nara, Japan Photos by Acar, H.)



Figure 4. Water and sand are preferred by children and they improve children's creativity (a,b-Viena, Austria Photos by Acar, C.; c-Luxemburg, Luxemburg Photo by Acar, H.)



Figure 5. Fixed equipment cannot be changed but with the activity opportunities that they offer such as swinging, sliding, and climbing they contribute to children's physical development and learning about their limits. At the same time, depending on their abilities of creativity, children can also use them for different purposes (e.g., sliding leaves, using sports materials according to their abilities, etc.). (a, b-Viena, Austria Photos by Acar, C.; c,d- Trabzon, Turkey Photos by Acar, H.)



Figure 6. Spaces and equipment suitable for sports activities support learning about these activities (a,b- Viena, Austria Photos by Acar, C., c-Paris, France Photo by Acar, H).



Figure 7. Outdoor classes or environmental education help children learn by seeing and experiencing (a-b-c, Nara, Japan Photos by Acar, H.).

Given the time that children spend in school throughout the educational year, schoolyards and outdoor classrooms are important outdoor spaces for children. Studies have shown that, compared to the closed classrooms inside the schools, having classes in outdoor classrooms increases academic achievement and acquisition of knowledge (Taylor and Kuo, 2008). The Reggio Emilia schools, which are an alternative to outdoor classrooms, define how to use the physical environment in schools according to children's learning environments and educational philosophy. If one considers the characteristics of the physical environments of these schools regardless of their educational philosophy, one sees that there are transparent connections between the classrooms and outside with large windows. Because such natural elements as trees and water elements outside are perceived as if they were inside the classroom, children are kept in a continuous communication with this area. Such a conscious use of the physical environment of the school supports the interactive education philosophy. The school environment creates a harmony between the school's vision and user activities (Loebach, 2004). As seen in this example, as well as designing school gardens for suitable uses in the breaks, other architectural solutions must also be produced that will create opportunities for children to see suitable designs in the school environment during the lessons.

3. Conclusions

In the light of what has been said so far, children's experience with, and education about, the environment can be in two ways. The first one is the inclusion of activities and practices based on experiments, observations and explorations into the curricula through which children will gain environmental experience. Secondly, when children use the outdoor spaces for play purposes, they can unconsciously get information and gain experience about the environment through observation during their activities.

In conclusion, different alternatives may be developed for children to enhance their environmental experience, to improve their environmental consciousness, and to contribute to their learning through the information that they get from the environment. All these may also be evaluated in terms of different disciplines. In terms of education; more activities based on practice and observation of practice results must be included in the curricula, applied

environmental education must be offered, outdoor classrooms must be brought into the agenda by creating suitable conditions, school gardens must be designed in such a way as to enable children to interact with the natural elements. In nursery schools, children must have more opportunities to use the outdoor spaces. Especially in city centers, outdoor spaces that children can use must be designed, and these spaces must contribute to children's learning while they are meeting their need for play. In such designs, both natural and artificial elements must be used; however, the number of natural elements must be more than artificial elements. Once such outdoor spaces have been designed, which will meet children's needs and expectations, they will contribute to their learning; and children who spend most of their time in such closed areas as homes and internet cafes, in front of televisions and computers will have been encouraged to use the outdoor spaces. Consequently, we will have raised healthy individuals who had experience with the nature in their childhood, who know the environment, and who have more practice and permanent information than theoretical information.

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