



Investigation of the Effects of School Gardens on Education in Terms of Various Variables

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Abstract

This study aims to determine the physical conditions, cleanliness and order of the school gardens, the conditions of the garden walls and the security measures taken regarding the gardens, and to reveal the reflections of these features on education. In addition, this study reveals the satisfaction levels of students, parents, teachers and school administrators regarding school gardens. This study is a qualitative research in survey model. Research data were collected by natural/unstructured observation and semi-structured interview techniques. Content analysis technique was used in the analysis of the data. This study was conducted in six official primary schools at lower, middle and upper socio-economic levels, and interviews were conducted with 163 students, 95 parents, 67 teachers and 15 administrators in these schools. In the research, it was determined that the school gardens do not have the features to increase the physical activity of the students, there are insufficient and unplanned applications in the gardens, and the gardens do not contribute to the educational activities. In addition, it has been determined that students, parents, teachers and administrators are not satisfied with the physical conditions, cleanliness and order of the school gardens, the condition of the garden walls and security measures.

Keywords: School, Schoolyard, Education, Physical structure, School environment

Okul Bahçelerinin Eğitime Etkilerinin Çeşitli Değişkenler Açısından İncelenmesi

Öz

Bu çalışma, okul bahçelerinin fiziksel koşullarını, temizlik ve düzenlerini, bahçe duvarlarının durumlarını ve bahçelerle ilgili alınan güvenlik önlemlerini yerinde tespit etmeyi ve bu özelliklerin eğitime yansımalarını ortaya koymayı amaçlamaktadır. Öğrencilerin, velilerin, öğretmenlerin ve okul yöneticilerinin okul bahçelerine ilişkin memnuniyet durumlarını da ortaya koymaya çalışan bu çalışma, tarama modelinde nitel bir araştırmadır. Araştırma verileri, doğal/yapılandırılmamış gözlem ve yarı yapılandırılmış görüşme teknikleriyle toplanmıştır. Verilerin analizinde içerik analizi tekniği kullanılmıştır. Bu çalışma alt, orta ve üst sosyo-ekonomik düzeydeki altı resmi ilkökulda yürütülmüş ve bu okullardaki 163 öğrenci, 95 veli, 67 öğretmen ve 15 yöneticiyle görüşmeler gerçekleştirilmiştir. Araştırmada, okul bahçelerinin öğrencilerin fiziksel aktivitelerini artırıcı özelliklere sahip olmadıkları, bahçelerde yetersiz ve plansız uygulamalar bulunduğu, bahçelerin eğitim öğretim faaliyetlerine katkı sunmadıkları belirlenmiştir. Ayrıca öğrencilerin, velilerin, öğretmenlerin ve yöneticilerin okul bahçelerinin fiziksel koşullarından, temizlik ve düzeninden, bahçe duvarlarının durumundan ve güvenlik önlemlerinden memnun olmadıkları tespit edilmiştir.

Anahtar Sözcükler: Okul, Okul bahçesi, Eğitim, Fiziksel yapı, Okul çevresi

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Introduction

The environment in which the child lives plays a major role in raising children who will be the architects of the future as individuals who are strong both physically and mentally. Especially, with increasing environmental problems and decreasing green areas in urban areas, the importance of playgrounds where children spend most of their time in the mental and physical development of children is an undeniable fact (Erdönmez, 2007). Children in schools spend most of their time in the school gardens during the development period. From this point of view, the fact that school gardens are sufficient in terms of quality and quantity plays an active role in child development. Children's playgrounds and sports areas in schools offer opportunities for children to be physically and mentally dynamic during the lesson day. Another factor that offers healthy living environments in the outdoor setting of school gardens is their appearance in an aesthetic order (Aksu & Demirel, 2011).

Children's closest places to real life are school gardens. As a matter of fact, Montessori stated that school gardens increase patience and sense of responsibility, improve moral education and understanding and interest in nature (Bowker & Tearle, 2007). On the other hand, Frobel, one of the famous educators, stated that the child should come into contact with nature in order to develop / mature, and he worked to arouse a love for nature in children in his school, which he called the kindergarten (Kansu, 2017). It has become more difficult than ever to instill a love of nature in today's children. Because today's children, who must live in big cities, can realize the beauties of nature either by reading books or watching documentaries. At this point, school gardens offer many opportunities as a place where real life experiences can be experienced in terms of environmental education. It can be said that especially garden activities help students develop positive attitudes towards the natural environment and enable them to form an understanding about the environment. It is stated that the most important determining factor in the positive perceptions of adults towards nature and the environment is the activities held in the schoolyard during childhood (Blair, 2009).

School gardens are areas that support and complement education at school. The planning and design of these areas is as important as the planning and design of the interior spaces of the school (Arslan-Muhacir & Yavuz-Özal, 2011). In order for children to grow up as physically and mentally healthy individuals in the future, they need environments and opportunities to develop their social, physical, emotional and mental skills. To develop these skills; education, games and sports, social-cultural activities and various activities for ceremonies and celebrations should be considered together with this awareness. The most suitable and effective places where all these activities can be carried out are school gardens. Learning opportunities expand and a more flexible learning area is formed in school gardens arranged in this direction (Algan, 2008).

Today, in developed countries, school gardens are perceived as educational spaces rather than just places where children can spend their free time during breaks (Erdönmez, 2007; Skelly & Bradley, 2007). According to studies on children's behaviors, children who play and spend time in high school gardens with natural features are more creative and their learning and perception styles are more effective (Louv, 2012; Özdemir & Yılmaz, 2009). School gardens with dense green areas support dynamic activities beneficial to health and such energetic activities eliminate the risk of obesity (Özdemir & Çorakçı 2010). Bowker and Tearle (2007) found in their research that schoolyards have a deeper impact on the ecological system of

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children so that they can approach global problems and solutions with environmental awareness demonstrated that they have the potential. However, school gardens in Turkey are not considered adequate by users and school management in terms of physical and landscape features. These spaces do not include features that increase students' physical activity. Unfortunately, the use of natural landscape elements such as plants, water and soil are minimal in the school exterior (Özdemir & Yılmaz, 2009). As can be seen, there are insufficient and unplanned practices in school gardens in Turkey. These deficiencies cause disruptions in the activities of the child to spend his/her energy and negatively affect physical development.

The socialization function of the school as a social environment, the adaptation of the child to in-class and out-of-class activities is much more important than the informing function (Yavuzer, 2018). Studies show that students integrate their math, science, grammar, and other abilities using their immediate environment and all their five senses, and learn better (Lieberman & Hoody, 1998). What teachers do regularly in school gardens activities are very effective for children to learn the importance of plants or their relationship with biodiversity (Jhonson, 2012). Skelly and Bradley (2007) in their research, they emphasized that teachers should use school gardens for an effective environmental education and positive attitudes towards the environment. Outdoor games establish a strong bond with social skills and increase creativity (Miller, Tichota & White, 2013). School gardens are a powerful place where students interact physically with their immediate environment it provides an experiential learning environment. By doing and living in such an environment, students they gain hands-on experience and can produce solutions by seeing the problems on the spot (Maloof, 2006). Outdoor activities can be more effective when they are an integral part of the curriculum. First, we need to accept that both indoor and outdoor spaces are in the nature of education (Şişman & Gültürk, 2011)

Children's diverse needs and leisure priorities should be considered when planning all school activities. In the design of school gardens, the participation of students, educators, members of parent-teacher associations, decision makers and experts are important (Algan & Uslu, 2009). In school garden planning, the issue cannot be solved by just allocating open space. Open spaces should be planned by considering criteria such as the quality of the school, the level of the school, form, function, social structure of the environment and recreation opportunities (Akdoğan, 1972). The sections that an ideal school garden should include; enclosing wall, recess and ceremony areas, sports fields, botanical and zoological gardens, classroom gardens (agricultural practice areas), open-air classroom or theater (Tanriverdi, 1987; Uzun, 1990). Natural areas contribute positively to children's learning and cognitive development, as children find playing in natural areas more attractive and interesting.

In this study, which aims to determine the physical conditions, cleanliness and order of the primary school gardens, the conditions of the garden walls and the security regulations taken regarding the gardens, and to reveal the reflections of these features on education, the satisfaction levels of the students, parents, teachers and school administrators about the school gardens are also revealed. For this aim, answers to the following questions were sought:

1. What are the physical conditions of the school gardens?
2. How is the cleanliness and orderliness of the school gardens?
3. What is the condition of the school garden walls?

4. What is the security situation of the school gardens?
5. How is the satisfaction status regarding school gardens?

Method

Research Model

This study, which aims to determine the physical characteristics of primary school gardens and to reveal the reflections of these gardens on education, is qualitative research in the survey model. In the survey model, which aims to describe a past or present situation as it is, the event, individual or object that is the subject of the research is tried to be defined in its own conditions and as it is (Karasar, 2022).

Study Group

The population of the research consists of 37 primary schools in Altınordu district of Ordu province and 6 primary schools selected according to certain criteria in the sample. It was carried out in 6 public primary schools. The students were from lower, middle and upper socio-economic levels. Two schools were selected from each level. In the classification of the socio-economic levels of the schools, the data of the provincial directorate of national education were used. In the classification made, it was seen that the development level of the region where the schools are located and the socio-economic structures of the parents were taken as criteria. In addition, interviews were conducted with 163 students, 95 parents, 67 teachers and 15 administrators from schools with low and medium socio-economic structures.

Data Collection

Data collection process was carried out in two stages. In the first stage, natural/unstructured observation by the researchers was used, and in the second stage, semi-structured interview technique was used. The observations were made by the researchers by sitting on one of the benches in the school garden or taking notes by walking around the school garden, and no interaction was made with the teachers and students. Participatory observation is made in a natural environment and provides more detailed information than quantitative measurement tools (Cohen, Manion & Morrison, 2007). In the research, in order to present different perspectives in the interpretation and description of the observation data and to increase the reliability of the research (Cohen, Manion & Morrison, 2007; Yıldırım & Şimşek, 2021), the interview technique was used in addition to the observation. In the interviews, students, parents, teachers and administrators of schools with low and medium socio-economic structure were asked whether they were generally satisfied with the physical conditions, cleanliness and order of the school gardens, the condition of the garden walls and the security measures taken. After the observations were completed, the interviews were held in the school gardens. In this study, the principles of scientific research and publication ethics were meticulously complied with, and necessary permissions were obtained for this purpose, and a Voluntary Consent Form was signed by the participants.

Analysis of Data

The data obtained as a result of the research were analyzed by content analysis technique. Content analysis; it is an analysis technique that brings together similar data around certain

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categories and themes in an understandable way and allows to make inferences (Yıldırım & Şimşek, 2021). First of all, the obtained texts were read several times independently by two different researchers and coding was made. The concepts used during the coding were obtained from the data related to the literature. Then, the codes were brought together and common aspects were found, so that the themes (categories) that would form the main lines of the research findings were revealed. By comparing the codes of the researchers, incompatibilities were determined and the codes that could not be agreed were changed. The codes under the determined common themes were explained and interpreted in relation to each other, and the findings were revealed in line with the purposes of the research.

Qualitative data obtained through interviews, on the other hand, were analyzed by quantifying (digitizing) considering the similarities and closeness of the answers. Quantification of qualitative data; it is the transformation of data obtained through interview, observation or document review into numbers or figures by going through certain processes (Yıldırım & Şimşek, 2021).

The findings obtained as a result of the analysis of the data were arranged in a systematic, logical, consistent and understandable manner and presented in line with the purposes of the research. The findings were interpreted systematically with a critical approach, multidimensional considerations were made while stating the possible reasons for the findings, and discussions supported by the results of the relevant literature were made. In the interpretation of the findings, excessive generalizations were avoided in the results and discussions, and a flexible language with possibilities was used instead of a sharp language.

Findings

1. Physical Conditions of the Schoolyard

The findings regarding the general condition of the physical conditions of the examined school gardens are given in Table 1.

Table 1. *Physical Conditions of the Schoolyard*

Physical Conditions	Schools					
	1	2	1	2	1	2
	Low Level		Intermediate Level		Upper Level	
Basketball court	-	-	+	-	+	+
Volleyball court	-	+	+	-	+	+
Soccer field	+	+	+	+	+	+
Children's playground (park)	-	-	X	-	X	X
Atatürk statue	+	+	+	+	+	+
Rest area and tools	-	-	+	X	+	+
Water	-	-	-	-	-	-
Trash cans	+	+	+	+	+	+
Security	-	-	-	+	+	+
Trees	-	+	-	-	+	-
Garden wall	+	+	+	+	+	+
Practice garden	-	-	-	-	-	-

Table 1, it is seen that there are sports fields/fields in the school gardens in general, there are garbage bins and Atatürk statute in the garden of each school, there are no children's

playgrounds/parks in four schools, these parks are unusable in two schools, and there is no water in the practice garden and garden in any of the schools studied. It was determined that there were private security guards in the two schools examined, and this task was carried out by the servants in the other schools.

2. Cleanliness and Orderliness of School Gardens

Data on the cleanliness and orderliness of school gardens are given in Table 2.

Table 2. *Cleanliness and Orderliness of School Gardens*

Schools	Garden Observations
Low Level	1 The garden is not clean. There is garbage and waste in the garden. The garden is in disrepair. There are puddles and mud in the garden. The concrete floor of the garden is cracked and lifted in places. The garbage bins in the garden are not standard, they are broken and rusty. Sports fields/courts are dirty and untidy.
	2 Not clean. There are various garbage and especially packaging waste in the garden. There are puddles of wastewater on the ground. Liquids are flowing from the garbage cans and the garbage is overflowing on the ground. Some of the few trees in the garden are dry. Sports fields/courts are dirty.
Intermediate Level	1 The garden is clean and tidy. There is no significant amount of garbage and waste in the garden. The garbage cans in the garden are covered. The asphalt garden floor is clean and smooth. Sports fields/fields are clean and tidy. The inscriptions on the Atatürk bust have been erased. Benches in the garden are suitable for use.
	2 Not clean. Paper, packaging products, plastic bottles, fruit and nut shells are scattered all over the garden. The garbage cans in the garden are rusty and placed in the garden in an irregular manner. Most of the benches in the garden are broken and unpainted. The asphalt garden floor is worn and has been lifted in places. Sports fields/fields are clean and tidy
Upper Level	1 The garden is considered clean and tidy. There is no notable garbage and waste in the garden. There are garbage bins with lids in the garden. Asphalt floor has been renewed. The game tools in the garden are unusably broken. The trees in the garden look well-groomed. Sports fields/fields are clean.
	2 The garden is considered clean and tidy. There is no notable garbage and waste in the garden. There are lidded trash cans and recycling bins placed neatly in the garden. Most of the play tools in the garden are broken and unpainted. The school's garden gate has been painted and is in usable condition. Sports fields/fields are clean and tidy.

Table 2, it is seen that the garden is not clean and tidy, the asphalt or concrete garden ground is not clean and smooth, the garden gate is unpainted and not usable, and the sports fields/fields are dirty and untidy in three schools, especially in schools with a low socio-economic structure. The gardens of the three schools, especially those with high socio-economic structure, are clean and tidy, there is no significant garbage and waste in the garden, the garbage cans in the garden are covered, the asphalt or concrete floor is clean and smooth, the garden gate is painted and useful, it has been determined that the sports fields/fields are clean and tidy, and the benches in the garden are suitable for use.

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3. What is the Condition of the School Garden Walls?

Data on the condition of the school garden walls are given in Table 3.

Table 3. *Condition of School Garden Walls*

Schools	Garden Observations
Low Level	1 The garden walls are very high. The wall is unplastered and unpainted. There are cracks in the walls. There are writings on the walls covered with paint. There are wire fences on the garden walls behind the school. There are large holes in the garden walls caused by collapses.
	2 The garden walls are very high. There are some collapses in the garden walls. Garden walls are unplastered and unpainted. There are wire fences in places where no walls are built behind the school. There are few trees planted parallel to the garden walls.
Intermediate Level	1 The walls are plastered but painted in incompatible colors. The writings and pictures on the walls have been erased and faded. There are wire fences on some of the garden walls. Entrances and exits to the garden are made through a single door. There are also students who try to get in and out by jumping from the walls because the walls are too low.
	2 The walls are plastered and painted. There are educational pictures and writings on the walls. The walls are of normal height.
Upper Level	1 Garden walls are made in a decorative way. There are trees planted parallel to the walls and densely planted. On the walls, there are educational articles and cartoon characters written in accordance with the decorative structure of the walls. The height of the walls is appropriate for the age of the students. Entrances and exits to the garden are made through a single door.
	2 Garden walls are painted and smooth. There are aesthetically standing railings on the walls. There are educational texts and cartoon characters on the walls. The height of the walls is appropriate for the age of the students. Entrances and exits to the garden are made through a single door.

Table 3, it is seen that there are garden walls in all schools. However, especially in schools with low and middle socio-economic structure, the height of the garden walls is above or below the standards, the walls are unplastered and unpainted, there are wire fences on the walls that are destroyed in places, there are no educational writings or pictures on the walls, the existing pictures and writings appears to have been erased and faded. It is seen that the garden walls of the schools with a high socio-economic structure are plastered, painted, more orderly and more aesthetic, there are texts and pictures with educational content on these walls, and the heights of the walls are suitable for the age group of the students.

4. Security Status of School Gardens

Data on the security status of school gardens are given in Table 4.

Table 4. *Security Status of Gardens*

Schools	Garden Observations
Low Level	1 The garden walls are very high. There are wire fences on the garden walls behind the school. There are large holes in the garden walls caused by collapses. While the entrances and exits to the garden are made through a single door, there are also students and peddlers entering and exiting through the holes. There is no security booth and security guard at the garden gate, and everyone can enter and leave the garden easily. The garden is monitored by cameras.
	2 The garden walls are very high. There are some collapses in the garden walls. There are wire fences in places where no walls are built behind the school. While the entrances and exits to the garden are made through a single door, there are also students, parents and peddlers entering and exiting from the collapsed parts of the walls. There is no security booth and security guard at the garden gate, and everyone can enter and leave the garden easily. The garden is monitored by cameras.
Intermediate Level	1 There are wire fences on some of the garden walls. Although the entrances and exits to the garden are made through a single door, there are also students and peddlers who try to get in and out by jumping from the walls because the walls are too low. There is no security booth and security guard at the garden gate, and everyone can enter and leave the garden easily. The garden is monitored by cameras.
	2 The walls are of normal height. Entrances and exits to the garden are made through a single door. There is no security booth and security guard at the garden gate, security is provided by the school's servants. The garden is monitored by cameras.
Upper Level	1 The walls are of normal height. Entrances and exits to the garden are made through a single door. There is a security booth and a private security guard at the garden gate. The garden is monitored by cameras.
	2 There are aesthetically standing railings on the walls. The height of the walls is normal. Entrances and exits to the garden are made through a single door. There is a security booth and a private security guard at the garden gate. The garden is monitored by cameras.

Table 4, it is seen that the gardens are monitored by security cameras in all schools and that all schools enter and exit through a single door. However, due to the structure of the garden walls, especially in schools with low socio-economic level, it is seen that students and non-students can enter the school garden from different ways, and these schools do not have security guards. It is seen that the gardens are monitored by cameras, the entrances and exits are made through a single door, and the schools have private security guards in schools with a high socio-economic structure.

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5. How is the Satisfaction Status Regarding School Gardens?

The data on the satisfaction levels of students, parents, teachers and administrators regarding school gardens are given in Table 5.

Table 5. Stakeholders' Levels of Satisfaction with School Gardens

Features	Student		Parent				Teacher				Administrator					
	Yes		No		Yes		No		Yes		No		Yes		No	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Physical Conditions	34	20.86	129	79.14	19	20.00	76	80.00	13	19.40	54	80.60	3	20.00	12	80.00
Cleanliness and Order	32	19.63	131	80.37	13	13.68	82	86.32	9	13.43	58	86.57	2	13.33	13	86.67
Garden Walls	29	17.79	134	82.21	20	21.05	75	78.95	12	17.91	55	82.09	3	20.00	12	80.00
Security	18	11.04	145	88.96	8	8.42	87	91.58	5	7.46	62	92.54	1	6.67	14	93.33

Table 5, it is seen that the students, parents, teachers and administrators of schools with low and medium socio-economic structure are generally not satisfied with the physical conditions, cleanliness and order of the school gardens, the condition of the garden walls and security measures.

Discussion, Conclusion and Recommendations

Discussion and Conclusion

Children are physically neglected if their basic needs including health, cleanliness, etc are not provided satisfactorily. In the research, it is understood that the physical characteristics of the school gardens (physical conditions, cleanliness and order, garden walls and security) do not meet the basic needs of the students to a large extent. It is seen that schools with low and middle socio-economic structure are far from meeting these needs. Especially in schools with low and middle socio-economic structure, there is no children's playground/park, there are no recreational areas and vehicles in schools, or they are not available, there are no sports fields suitable for purpose in these schools, there are no security guards in these schools, and there is no practice garden in any of the schools examined. It has been determined that there is no water (fountain/tap) facility in the garden and that there are no trees in the garden of most of the schools. In other studies, it has been determined that the equipment in the school gardens is missing, irregularly placed, sloppy materials are used in the construction of these equipment, and the school gardens are deficient in many respects (Arslan-Muhacir & Yavuz-Özal, 2011; Erdönmez, 20107; Gömleksiz, Kilimci, Vural, Demir, Koçoğlu-Meek & Erdal, 2008; Mansuroğlu & Sabancı, 2010; Şişman & Gültürk, 2011). In the study conducted by Karatekin and Çetinkaya (2013), it was observed that none of the primary schools did not have the application gardens required for environmental education and some landscaping equipment and areas that would increase the children's interest, knowledge, and love for nature. Containment wall, recess and ceremony areas, sports fields, botanical and zoological gardens, classroom gardens (agricultural practice areas), open-air classroom or theater are the sections that an ideal school garden should contain (Erdönmez, 2007). The fact that school gardens do not contain features that increase students' physical activity, and that there are insufficient and unplanned practices in the gardens, may prevent children from engaging in activities aimed at expending their energy and their development. Therefore, it can be said that the school gardens do not contribute much to the educational activities in the school in terms of the physical conditions.

Investigation of the Effects of School Gardens on Education

In the research, in three schools, especially in schools with a low socio-economic structure, the garden is not clean and tidy, the asphalt or concrete garden floor is not clean and smooth, the garden gate is not painted and usable, the sports fields/fields are dirty and untidy, waste in places it has been determined that there are puddles of water, liquids flowing from the garbage cans and the garbage overflows to the ground. The findings show that the gardens of the schools, especially in the lower socio-economic level, are not clean, tidy and well-maintained. The findings can be interpreted as the right of students to receive education in a clean, orderly and healthy environment is not overlooked. In other studies, it has been determined that school gardens are not clean and tidy (Erdönmez, 2007; Karatekin & Çetinkaya, 2013; Şişman & Gültürk, 2011).

In the research, there are garden walls in all schools, but especially in schools with low and middle socio-economic structure, the height of the garden walls is above or below the standards, the walls are unplastered and unpainted, there are wire fences on the walls that are destroyed in places, educational writings or pictures on the walls. It was determined that the existing pictures and texts were deleted and faded. In other studies, it has been determined that school garden walls are often lacking in terms of contributing to education and security (Erdönmez, 2007; Karatekin & Çetinkaya, 2013; Şişman & Gültürk, 2011). For primary school students who spend most of their time at school, the quality and quantity of school gardens is of great importance for their physical and mental development. This importance reveals the necessity of considering the exterior of the school as well as increasing the quality of the school building in order to complete the education process successfully.

In this study, it is seen that the gardens are monitored by security cameras in all schools and that all schools enter and exit through a single door. However, it has been determined that students and non-students can enter the school garden from different ways, especially in schools with low socio-economic level, due to the structure of the garden walls (destroyed, cracked, hole), and that these schools do not have security guards. Considering the necessity of understanding the importance of primary school gardens and the fact that a student's education life takes place in the exterior spaces as well as the interior spaces of the school, it becomes an indisputable fact that the students should be safe. However, it would be a great optimism to expect a child who cannot play comfortably and safely and who cannot safely perform the social and physical activities necessary for his development to be successful. In the study conducted by Şişman and Gültürk (2011) it was stated that the use of the gardens of the schools, which are in the old urban fabric, as parking lots, poses a problem in terms of child safety. Shirtless et al. (2008), especially in the physical conditions of schools located at the lower socio-economic level; it has been determined that there are inadequacies in terms of providing the physical needs of children such as security. In other studies, it has been determined that school gardens have deficiencies in terms of providing student safety (Akdoğan, 1972; Aksu & Demirel 2011; Tanrıverdi, 1987; Uzun, 1990).

In the research, it has been determined that the students, parents, teachers, and administrators of the schools with low and middle socio-economic structure are generally not satisfied with the physical conditions, cleanliness and order of the school gardens, the condition of the garden walls and security measures. In other studies, it has been determined that school gardens are not designed and equipped at a satisfactory level (Arslan-Muhacir & Yavuz Özal, 2011; Erdönmez, 2007; Erözeren & Demirkasımoğlu, 2022; Mansuroğlu & Sabancı, 2010;

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Şişman & Gültürk, 2011). While the function of schools and school gardens in environmental education is so important, official and serious-looking schools are the leading buildings in our country where children are most negatively affected (Görmez & Göka, 1993). According to Çağlar (1995), the environment of schools is so irregular and neglected that it does not allow to love nature. In the study conducted by Özdemir and Yılmaz (2009), it was determined that the school gardens in our country were not found sufficient by teachers, students, parents, and school administrators in terms of their physical and landscape characteristics.

Recommendations

Schools should not only be a place where the knowledge that children need is learned, but also an environment where some attitudes, values, skills and behaviors about life will be acquired. In order for our children to grow up well in all aspects, school gardens should be transformed into places where some knowledge, attitudes, skills and behaviors can be gained. In school garden planning, the issue cannot be solved by just allocating open space. Open spaces should be planned by considering criteria such as the quality of the school, the degree of education, form, function, social structure of the environment and recreation opportunities. Children find playing in natural areas more attractive and interesting. Natural areas contribute positively to the learning and cognitive development of children. When designing all school activities, children's needs and leisure priorities should be considered. In the design of primary school gardens, the participation of students, educators, parents, decision makers and experts in the process is important.

School gardens should be improved and made suitable to meet the needs of the students as well as to contribute to the open green areas of the city. In addition, garden areas, which will make an important contribution to the creation of environmental and nature awareness in children, should be included. Considering that they are frequently used by students, the choice of materials in the equipment in the school gardens is extremely important for the health of the students. The equipment to be used in the garden should be chosen from wood as much as possible and should be compatible with nature. In addition, these elements should be designed in colors and shapes that will attract the attention of children.

Choosing the wrong material on the ground restricts the easy movement of children in the garden. In addition, in the event of an accident, the hard floor of the area where the child will fall causes injury and damage to them. For this reason, the material to be used should be soft textured. School garden walls should be equipped with interesting writings, pictures and figures containing practical and useful information about life. Entrances and exits to the schoolyards should be made through a single door for security purposes, security booths and security guards/officers should be present at the entrances of the schoolyards regardless of the number of students.

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