



EXAMINATION OF PHYSICAL PROPERTIES OF PLAYGROUND OF PRE-SCHOOL EDUCATION INSTITUTIONS: EXAMPLE OF İZMİR PROVINCE, TURKEY

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Abstract:

One of the indicators that reveals the quality of education system in a country is the physical quality of environments that education is presented. The applicability of education programmes can only be possible with the existence of physical environments organized in proper conditions. However when education environment is said, only school buildings and classrooms come to mind will be wrong. As well as school buildings when playgrounds are effectively organized, they can turn out to be a rather efficient education environment. Especially today for children who are imprisoned in concrete constructions in city life, organizing playgrounds effectively for education is an important necessity on several counts. The aim of this research is to identify physical properties of playgrounds of formal pre-school education institutions in İzmir province and contribute to amendment efforts that will be done about this subject. Since descriptive method was used in the research, current situation was analysed. Formal pre-school education institutions of the Ministry of National Education (MEB) in İzmir province formed the population of research. In sampling choice, stratified sampling method was used; each institution types of MEB giving pre-school education were accepted as a category. Accordingly, playground properties of totally 50 institutions consisted of 16 formal independent kindergarten, 24 kindergarten subsidiary of primary school and 10 practice kindergarten subsidiary of vocational high school, were identified. As data collection tool "Physical Properties of Playground Observation Form" prepared by researcher, was used. This form is in a mixed structure consisted of control list, likert type items and open-ended observation items. Content validity of assessment instrument was calculated by Miles & Huberman percentage of consent method as well as basing on opinions of specialists and it was found as .92. In analysis of quantitative data percentage, frequency and average calculations were done and the findings were presented as tables. In analysis of qualitative data, descriptive analysis method was used. According to results of research, the playgrounds of pre-

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school education institutions have insufficient largeness. Almost all playgrounds have concrete floor and there are no educational organizations suitable to development of children. Another remarkable finding is there is no playground separated for kindergarten in most of primary schools and vocational high schools. These results draw attention to the necessity of organizing playgrounds more effectively.

Keywords: pre-school education, playgrounds, educational environments, playground organizations, playground park zone, playground agricultural land, physical environment

1. Introduction

According to the research done in the USA the time that children spend in closed areas and by using media within a day is approximately 8 hours (Coyle, 2010) whereas in Turkey more than 60% of children spend only 1 hour in open area in a day. This period is less than the aeration period of prisoners in a high security prison (www.unilever.com). In old times the children that spend almost whole of their holidays outside, in streets, at parks, in villages etc. and hardly persuaded to come back home, left their places to ones preferring to play computer at home or watch television (Clements, 2004). City life and media addiction causes volunteer home confinement of children. At the end of this situation many problems such as increase in number of obese, asthma and diabetic children, asocial behaviours, lack of real life experiences, concentration disorder, weakness in solving daily life problems, showing individual isolation and showing aggressive behaviour, became widespread (Önal and Adal, 2014). The share of educators in overcoming these problems is to provide children to spend part of their times outside within school hours by increasing quality and functionality of playgrounds.

When education programmes are examined, it is seen that children spend most of education period inside of building. Only a few hours in week is separated for playground activities. In order to prevent this for example in California a detailed standards list for playground design was prepared and taken decision of children spend at least their one hour in a day in the playground (CDE, 2002).

Projects such as forming a "habitat" in playground, giving a large place for agricultural land, children are eating their fruits and vegetables they plant themselves can be shown among example designs regarding effective usage of playground. However out of class activities of children are not limited just with them. In fact, all the activities conducted within class can be planned with activities in playground as interdisciplinary way. The contributions that effective design of playground will bring, can be ordered as follows:

- It supports development of all psychomotor skills of children. Fresh air and movement are valuable for their physical health (Dodge, Colker ve Herroman, 2008).

- It increases their real life experiences. It provides children to interpret knowledge they get separately in class by using and compare them with problem situations they encounter in real life (Danks, 2010).
- Via group activities conducted in playground their social skills such as leadership, belonging to a group, obeying the rules, solving communication problems etc. and their self-confidence develop
- Many scientific concepts such as plants, animals, the sky, seasons etc., mathematical skills, their vocabulary and naturalistic intelligence develop (Joyle, 2010).
- It provides positive contribution to viewpoint of children towards school, makes school more entertaining and intriguing, increases learning motivation (White, 2004).
- It provides decrease of discipline problems occur within classroom (CDE, 2002).
- It provides children to focus on a problem situation or learning duty longer, improves attention and memory (Danks, 2010).
- Being in natural environment is the necessity for children by their nature. Spending time in playground will be good for mental health of children imprisoned in buildings in city (Dodge, Colker ve Herroman, 2008).

When playground is used and designed effectively besides general benefits mentioned above, provides children to use all knowledge they acquired within class in real life, reinforces knowledge and makes it meaningful. It is not hard to say that a science-nature, mathematics or a game activity conducted in playground is more efficient than the ones conducted in class. Gardner (1991) stated scholastic knowledge categorically remains limited with regulation determined by school however non-class education encourages entering into relation with knowledge directly. If the school is not separate from life, becomes the part of it, education should cross school walls (White, 2004). In addition to this, White (2004) emphasized children having education in playgrounds is also very important for the future of nature besides their development. In other words, the activities that children conduct in playground are an important step in saving the future of nature in a way. But for all these playground should be designed in a qualified way.

Pre-school period is the period that children recognize and interpret the World, observe environment, learn and acquire many experiences. The children of that period how equipped they are, being imprisoned indoors is against their nature. Accordingly, especially in pre-school education playground usage is rather important. However unfortunately the scene that we encounter in most of the state schools in Turkey is playgrounds totally covered with concrete. These playgrounds are generally used as car parks or open air celebration- meeting area after school and at the weekends.

In literature the principals that have to be taken into consideration for effective design of playground in pre-school education institutions were revealed many times (Dodge, Colker and Heroman, 2008; Demiriz, Ulutaş, and Karadağ, 2011; Oğuzkan and Oral, 2003; Woolner, 2010; Nair, 2014; Sobel, 2016; Spencer and Wright, 2014). Based on

these principles, the properties that have to be in an effectively designed playground can be explained as follows:

A. Playground Size

Playground size that has to be in a pre-school education institution is determined according to children population at school. The area per child shows difference according to various countries. According to the area that playground has, open area ratio per child goes up to 5 square meter, 7 square meter, 7 square meter, 15 square meter and even up to 50 square meter (Demiriz, Ulutaş, and Karadağ, 2011). However, in Turkey physical standards published by the Ministry of National Education (MEB) was determined as 1.5-2 square meter of playground per child (MEB, 2011). Playground size should be in size to provide children efficient movement capability. In addition to this, playground should not be too sloping or rough. Nevertheless small hillockies and hollows that will be created in playground can be attractive for adventure games of children.

B. Playground safety

The prior standard that has to be provided in playground is safety measures. Playground has to be far enough from primary traffic. The borderline of playground has to be separated from surrounding with a fence, a wall or a decoration plant. If possible, there has to be a security staff in the playground. Monitoring school environment and playground with cameras can prevent children from risks coming outside (MEB, 2011). After playground borderline safety, safety in playground should be provided. Playground is the place where movement area of children is the largest and is open to risks of injury. That is why precautions such as furnishing the floor with soft tartan material, rasping the sharp edges of materials in the playground or covering them with soft material, avoid keeping unsuitable materials or toys in the playground that can injure them, should be taken. In addition, placing a first aid kit at suitable place in the playground or at point of building closest to the playground is among the safety measures that have to be taken.

C. Area of playground toys

As playground is designed, not only grassy and woodland but various areas having different functions should be formed. One of them and the most frequent one is area of playground toys. The floor of playground toys area should be formed of soft material, toys should be placed separately from each other to avoid accidents. Playground toys desired to be in a pre-school education institutions are swing, slide, seesaw, ferris wheel etc. These toys are preferred to be made of wood and durable material. Besides playground toys, unstructured toys can be used to support creativity of children. For example ordering logs in different sizes randomly as forming height from ground will be a stimulant for children to produce various games (Oğuzkan and Oral, 2003).

D. Playfield and movement area

In institutions having wide playground facility playfield and playground toys area should be designed separately from each other. In playfield there needed a physical organization for children to achieve their physical training and movement activities. The floor of this area should be concrete. In playfield and movement area there should

be basketball hoop, football goalpost, volleyball net, climbing track, hula hoop, various balls, baselines and sports equipment. Besides this, various vehicles such as skateboard, bicycle, roller skate, scooter, toy car can be used in this area (Demiriz, Ulutaş, and Karadağ, 2011; Oğuzkan and Oral, 2003).

E. Agricultural area

Today most of the researches conducted for qualified designing of playgrounds of pre-school education institutions give importance to agricultural area that will be formed in playground. Even "habitat projects" that can be formed in playground are suggested. An area where children plant and water their own vegetables, fruits, flowers and saplings are considered very beneficial in their education. The children that are occupied in agricultural activities gain many qualifications such as respect to nature, environmental awareness, healthy nutrition, stages of growing crops, reproductivity, sense of responsibility etc. In addition to this, an agricultural area in playground and the activities conducted in this area will contribute scientific skills and academic success of children. The materials that have to be in this field are rake, pickaxe, shovel, bucket, secateurs (under control of teacher), hose and tap water (Demiriz, Ulutaş, and Karadağ, 2011; Oğuzkan and Oral, 2003).

Besides agricultural area, it is important to have a grassy area and a woodland where children sit and relax, listen to tales and sing or have a picnic in sunny days. Even half-covered camellia built in this area will be a solution in air change during playground activities. This grassy and woodland can be together or side by side with agricultural area. What is remarkable is not ordering grass and trees in a narrow border in playground but covering a wide area (Demiriz, Ulutaş, and Karadağ, 2011).

F. Animal feeding area

Today, the basic properties that we want to gain to our children are to respect right to life of all living creatures and love animals. That is why being with other type of living creatures in playground gains an important experience for children. In an area separated in playground there can be cat, dog, chicken, rooster, chick, bird, tortoise, fish, worm, various insects etc. However it should be sure about that children are not allergic to one of the animals and animals are not predatory, poisonous or harmful. Of course, the area separated for animals should be clean and large, not to limit their freedom (Woolner, 2010; Nair, 2014).

G. Sandpit and waterpool area

Among the equipment that children like to play most are sandpits and waterpools. In one corner of playground, sandpit and waterpool will be formed and in these developments of creative thinking of children should be supported. In this area in sandpits of children, there should be rake, shovel and various tools that make shapes from sand etc. Again, in waterpool there should be sinking and floating objects. The hygiene should be taken care of by changing sand water regularly (Spencer and Wright, 2014).

H. Traffic area

One of the areas that should be designed in a pre-school education institution is traffic area. The paths in the playground can be liken to asphalt traffic roads and traffic lamps,

crosswalks and simple traffic signs can be placed roadsides. With this way, important skills can be gained to children living in city centres together with traffic (Sobel, 2016).

I. Amphitheatre area

If there is enough place in playground, an amphitheater suitable to the heights of children can be built. These areas have multi functions that can be used in drama activities, story reading times or big group discussions of children after playground activities (Sobel, 2016).

J. Half-closed area and winter garden

Making non-class activities just in spring and summer months is not suitable for the nature of children. Education period during winter season may become boring for children after a while or their movement demand may not be compensated sufficiently. That is why in a well-designed pre-school education institution, half closed areas can be given place apart from playground and school building. These areas can be a penthouse adjacent to school building, porch, arbour in playground or totally closed winter garden. Accordingly, children can continue playground activities preventing themselves from hotness of sun, rain or snow in winter months. Winter gardens covered by glass or transparent preservative substance can compensate playground requirement of children at the severe times of winter. These areas liken to a greenhouse and various plants and animals can live inside them (Spencer and Wright, 2014).

K. Suitability to disable people

As playground is designed, usage facilities of disabled children should be taken into consideration from the first stage to the last stage. Playground gate, school gate and placing of areas in the playground should not limit movement opportunity of disabled children. In addition to this, among playground toys there should be toys that physically disabled or visually impaired children can use. For visually impaired students tactual embossed roads, visual warnings for hearing impaired students should be placed (Woolner, 2010).

L. Other aspects

Playground properties that have to be in pre-school education institution can be determined as above. In Turkey as many schools have sufficient playground area, they do not use this area effectively. However, besides this, there are schools that have rather narrow playground areas. In this situation as playground is designed one area can be designed for more than one function. For example as agriculture, animal feeding area and woodland can be collected in one area; game, sports and traffic area can be collected in another area (Spencer and Wright, 2014).

When these properties that have to be in a qualified playground, are taken into consideration, the question *“how the schools in Turkey are suitable to these properties”* comes to mind. In order to improve physical properties of schools, firstly, current situation should be determined and physical shortages, mistakes should be identified. Based on this aim, the problems that their answers are searched are as follows:

1.1 Problem Sentence

What are the physical properties of playgrounds of formal pre-school education institutions in İzmir province?

1.2 Sub problems

1. What are physical properties of playground of independent kindergartens in İzmir province?
2. What are physical properties of playgrounds of primary schools giving pre-school education in İzmir province?
3. What are physical properties of practice kindergartens of vocational high school in İzmir province?

2. Method

In this research, descriptive method was used. The aim in descriptive research method is to reveal actual situation that answers research problem (Gay, Mills and Airasan, 2012). In this research, it was aimed to describe playground properties of pre-school education institutions in Turkey.

2.1 Sampling

Formal pre-school education institutions in İzmir province in Turkey form the population of research. In Turkey there are three formal institutions giving pre-school education. These are independent kindergartens, kindergartens subsidiary of primary school and practice kindergartens subsidiary of vocational high schools. As stratified sampling method was used in sampling choice, institution types giving pre-school education were identified as category. Based on these categories, totally 50 institutions consisted of 16 formal independent kindergarten, 24 kindergarten subsidiary of primary school and 10 practice kindergarten subsidiary of vocational high school, were included to the sampling.

2.2 Measurement Tools

As data collection tool "Physical Properties of Playground Observation Form" prepared by researcher, was used. This form is in a mixed structure consisted of control list examining the properties that have to be in an ideal playground, likert type quantitative items and open-ended items that the researcher recorded his observations. After application test and necessary arrangements final form is consisted of 9 main items and 30 sub items. Content validity of assessment instrument was calculated by Miles & Huberman percentage of consent method as well as basing on opinions of 6 specialists and the accordance between opinions of specialists were calculated (Miles & Huberman 1994: 64). With this calculation, validity was found as .92. In analysis of quantitative data percentage, frequency and average calculations were done and open-ended items were subjected to descriptive analysis. The findings were presented as tables and then interpret with observations of research.

In order to reveal the reliability of this research, interrater reliability calculation was done. In 20 of 50 institutions involved to research, another specialist with researcher applied measuring instruments. In order to calculate the accordance between each of them Cohen's Kappa formula was used. Kappa coefficient is an analysis that reveals the accordance by taking chance factor into consideration as well (Cohen, 1960). According to this analysis the calculated reliability coefficient is .90.

3. Findings and Comments

In this section, the findings obtained from research were presented in tables as answering sub problems of research by being separated into institution types:

3.1 Findings Regarding Physical Properties of Playgrounds in İzmir Province

Table 1: According to Institution Type Playground Area Per Child

Institution type	n	Average Playground	Average	Area per
		Area m^2	Child Population	Child m^2
Independent Kindergarten	8	765	202	3,7
Primary school Kindergarten	12	962	498	1,9
Practice Kindergarten	5	1125	670	1,6
Total	25	950,7	456,7	2,08

As findings in Table 1 are examined as playground area per child is 3.7 square meter in independent kindergartens, in primary school playgrounds this area decrease to 1.9 square meter. In vocational high schools where there are practice kindergartens this area was obtained as 1.6 square meter. Again, as it is seen in the table as the lowest playground largeness and school population is in independent kindergartens, the highest playground largeness and school population is in vocational high schools. When all institutions are evaluated together the average area in playgrounds per child is 2.08 square meter. When other countries are considered the area per child in playgrounds are in France 10 square meter, in England 24,1 square meter (Aksoy, 2011), in Germany 30 square meter (Yenice, 2013), in the USA 20 square meter (New Jersey School Outdoor Area Working Group, 2007). When this ratio is compared with international standards, it is rather insufficient. A similar finding takes place in most of related researches (Aksu and Demirel, 2011; Güleş, 2013; Karatekin ve Çetinkaya, 2013; Kalburan, 2014).

Table 2: The Existence of Playground Area Separated for Pre-School Education in Primary Schools and Vocational High Schools

Institution type	The number of institutions having separated playground area (n)	Total number of institutions (n)	%
Primary Kindergarten	4	24	16
Practice Kindergarten	2	10	20
Total	6	34	17

One of another striking finding obtained from research was presented in Table 2. According to the findings in the table, in very few of primary schools giving pre-school education and vocational high schools having practice kindergarten, there is a playground suitably designed for pre-school education. As only in two of primary schools (16%) whereas only in one of practice kindergarten (20%) had been made such an arrangement, there is no separate playground suitable for pre-school education in more than 80% of institutions. This situation prevents children to use playground effectively in terms of education. On the other hand, this creates a safety threat for children. It is rather important organizing playground in a qualified way for education besides its largeness providing sufficient movement area for children. Findings regarding necessary educational arrangements for playground were presented in Table 3.

Table 3: Educational Arrangements in Playgrounds According to Institutional Types

Institutional type	n	Park		Agricultural		Animal		Sports	
		toys (n)	%	Area (n)	%	Feeding Area (n)	%	Area (n)	%
Independent Kindergarten	16	14	88	2	12,5	0	0	0	0
Primary school Kindergarten	24	2	8	0	0	0	0	4	16
Practice Kindergarten	10	6	60	2	20	0	0	2	20
Total	50	22	44	4	8	0	0	6	12

According to the findings in Table 3, there is playground toys area in 14 of 16 kindergarten (88%), only two of 24 primary school playground (8%) there are playground toys. This ratio is only in 60% of practice kindergartens. Especially almost all of primary playgrounds there are not toys suitable to the usage of kindergarten children such as slide, swing, seesaw. On the other hand, almost all of playground toys in observed institutions are made of plastic. In some school (n=34) it was observed that playground toys are insufficient, neglected and open to accident risk. The other striking finding obtained from research is in almost all of institutions the lack of arrangements such as educational area, sports area, animal feeding area where animals such as dog, chicken etc. can be raised or agricultural areas where children grow various plants. This result reveals that there is no physical condition in playgrounds that was designed to support development of children as well as present them circumstances of experience.

The other factor that obtains quality of playgrounds in physical way is to equip playgrounds with arrangements allowing various educational activities. Other arrangements that have to be in playgrounds were presented in Table 4:

Table 4: Other Educational Arrangements in Playgrounds

Institution type	Concrete		Green		Sandpit and Waterpool		Semi-closed Playground		
	n	Area (n)	%	area (n)	%	(n)	%	(n)	%
Independent Kindergarten	16	16	100	6	37,5	0	0	6	37,5
Primary Kindergarten	24	24	100	2	12,5	0	0	2	12,5
Practice Kindergarten	10	10	100	4	40	0	0	6	60
Total	50	50	100	10	20	0	0	14	28

As findings in Table 4 are examined, it is seen that all the participant playgrounds (100%) have concrete ground. However, in an effective playground green area suitably arranged for children is expected. According to the table, only in 20% of participant institutions were found green area. The researchers in his observations recorded that this green area is consisted of border plants and wild weeds. Another striking finding is the lack of sandpit and waterpool in all of playgrounds. In playgrounds semi closed areas (penthouse, porch, camellia etc.) exist in 37% of independent kindergartens, in 50% of primary school kindergartens and in 60% of kindergartens of vocational high schools. However according to the observations of researcher semi closed areas in primary schools and vocational high schools (n=8) serve usage of on duty teachers and visitor parents. All these findings are taken into consideration, it can be said that playgrounds of institutions giving pre-school education are not qualified in terms of education.

Finally, physical properties of playgrounds of participant institutions were given general competency point between 1 and 10. As this point was given, the physical situation of playgrounds in terms of various measurements, were taken into consideration.

Table 5: According to Institution Type Competency Average Points
Regarding Physical Properties of Playground

Institution type	Effective Physical Arrangement	Suitability to Development Level	Material Variability	General Competency Point
Independent Kindergarten	5,2	5	5,2	5,1
Primary school Kindergarten	2,7	2,3	2,6	2,5
Practice Kindergarten	4,4	4,1	3,8	4
Total	3,7	3,4	3,4	3,4

*The points were given between 1 and 10.

In Table 5 there are the points given by researcher regarding physical quality of playgrounds. By considering all necessary qualities in playground also mentioned in observation form, the physical property of playground was scored between the lowest point 1 and the highest point 10. As playground is given points, physical arrangement of playground (the effective design of concrete ground, green area, game area, agricultural area etc.), its suitability of development level (suitability of materials to the height of children, decorated in a way to attract attention of children), material

variability in the playground (game instruments, sports materials, agricultural materials etc.) were taken into consideration and finally a general point was given involving all these properties.

According to this, physical arrangement in independent kindergarten playgrounds got 5.2 over 10, the suitability of playground to development level got 5 over 10, material variability in playground got 5.2 over 10. The general point given to playground properties of independent kindergartens was 5.1 over 10. As physical arrangement of primary school playgrounds were taken 2.7 over 10, the suitability of playground to development level were taken 2.3 over 10, material variability in the playground were taken 2.6 over 10. The general point regarding physical quality of primary school playgrounds was 2.5 over 10. Playground properties of practice kindergarten in vocational high schools physical arrangement got 4.4 over 10, suitability of playground to development level got 4.1 over 10 and material variability got 3.8 over 10. The general point of practice kindergartens was 4 over 10.

When distribution of general point is considered, playgrounds of formal institutions giving pre-school education in Turkey got 3.7 over 10 in terms of effective physical design, 3.4 over 10 in terms of suitability of development of children and in terms of material variability in playground 3.4 over 10. The total average point given for playground properties of schools was 3.4 over 10.

When table is examined, as independent kindergartens got the highest point (5.1) in terms of playground properties, practice kindergartens got the second rank (4). Primary school playgrounds got the lowest point with 2,5. The highest point given to playground properties as shows that physical properties of playgrounds in Turkey is average and below average. There was only one independent kindergarten that got 10 over 10 in terms of all properties. From this situation, it can be said that playground properties should be improved and developed.

4. Discussion

One of the main factors that determine the quality of pre-school education is physical equipment and quality of given place. However, "education place" is not just consisted of school buildings and classes in these buildings. Playgrounds are learning areas as effective as classes. Especially in our century as the children living in cities are constantly in concrete buildings and in closed areas, Playground as a natural open area should be used effectively in terms of education. On the other hand, pre-school education by its nature should be based on real and active experiences. So the activities conducted in playgrounds are the most suitable conditions that provide children to achieve real life experiences in the first hand, move off, make researches and examinations.

Benefitting from playgrounds effectively depends on physical equipment and various educational arrangements in the playground. The prevalence rate of pre-school education in Turkey increases day by day. The current studies are in direction of gaining more children top re-school education. That is why the number of institutions

and classes giving pre-school education is tried to be increased. However, the point that has be considered is the change in quality besides statistical increase that is showed to be the proof of improvement in pre-school education. Obligatorily it is aimed to increasing quality and presenting children an effective education service as well as prevalence of education. One of the main factors of determining the quality of education service is the quality of physical arrangement.

4.1 Result and Suggestions

- Movement is in playgrounds per child in insufficient. National standards about this subject should be developed and playgrounds should be constructed large enough that is suitable to international standards.
- In primary schools and vocational high schools giving pre-school education there is no separate playground arrangement for usage of kindergarten children. This situation forms the biggest obstacle in effective usage of children of the playground. In these institutions giving education apart from independent kindergartens, enforcements regarding separate playground arrangements can be revealed.
- In most of the playgrounds, there is no playground toys area that was designed qualitatively. Additional educational arrangements such as agricultural area, animal feeding area, sandpit and waterpool area, traffic training area were not encountered in almost none of institutions. Basing on this result it can be said that playgrounds of pre-school education institutions are insufficient in terms of education.
- National standards regarding the largeness, ground properties of playground as well as educational arrangements and educational materials that have to be in playground should be improved and regulations should be done for inspections about this subject.

References

- Aksoy, Y. (2011). Çocuk oyun alanları üzerine bir araştırma İstanbul, Isparta, Eskişehir, Erzurum, Kayseri, Ankara, Zonguldak ve Trabzon illeri örneği. İstanbul Aydın Üniversitesi Fen Bilimleri Dergisi. 6, 82-106.
- Aksu, Ö. ve Demirel, V. (2011). Trabzon kenti ilköğretim okul bahçelerinde tasarım ve alan kullanımları. SDÜ Orman Fakültesi Dergisi. 12, 40-46.
- California Department of Education- CDE (2002). A Child's garden of standards. ISBN 0-8011-1579-5.
- Clements, R. (2004). An investigation of the status of outdoor play. Contemporary Issues in Early Childhood. 5(1) 68-80.
- Cohen J. A (1960). Coefficient of agreement for nominal scales. Educational and Psychological Measurement. 20, 37-46.

- Coyle, J.K. (2010). Back to school: Back outside. Create high performing students. National Wildlife Federation. Erişim tarihi: 15.09.2017, <https://www.nwf.org/pdf/Be%20Out%20There/Back%20to%20School%20full%20report.pdf>
- Danks, S. G. (2010). Asphalt to ecosystems. Design ideas for schoolyard transformation: USA. ISBN-978-0-9766054-8-5.
- Demiriz, S. ,Ulutaş, İ. ve Karadağ, A. (2011). Okul öncesi eğitim kurumlarında eğitim ortamı ve donanım. Anı Yayıncılık: Ankara.
- Dodge, D. T., Colker, L. J. ve Heroman, C. (2008). The creative curriculum for preschool. Teaching Strategies Inc: Washington.
- Gardner, H. (1991). The tensions between education and development. Journal of Moral Development. 20(2), 113-125.
- Gay, L.R., Mills, G. E. Ve Airasian, P. (2012). Educational research. Competencies for analysis and applications. Pearson Published: USA.
- Güleş, F. (2013). Okulöncesi eğitimde fiziksel çevreye ilişkin kalite standartlarının belirlenmesi. (Yayımlanmamış Doktora Tezi). Selçuk Üniversitesi, Çocuk Gelişimi ve Eğitimi Bilim Dalı, Konya.
- Kalburan, N. C. (2014). Denizli ilinde bulunan resmi ve özel anaokulu bahçelerinin karşılaştırmalı olarak incelenmesi. Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi. 18, 99-113.
- Karatekin, K. ve Çetinkaya, G. (2013). Okul bahçelerinin çevre eğitimi açısından değerlendirilmesi. Manisa ili örneği. Uluslararası Sosyal Araştırmalar Dergisi. 6(27). 307-315.
- MEB (2011). Özel öğretim kurumları standartlar yönergesi. Erişim tarihi: 11.12.2017, http://ookgm.meb.gov.tr/meb_iys_dosyalar/2012_08/17030121_standartyonergesi.pdf
- Miles, M, B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded Sourcebook. (2nd ed). Thousand Oaks, CA: Sage.
- Nair, M. (2014).The classroom is obsolete: It's time for something new. Education Week. Erişim tarihi: 03.03.2018, http://www.fieldingnair.com/wp-content/uploads/2015/05/The_Classroom_is_Obsolete-Ed-Week.pdf.
- New Jersey School Outdoor Area Working Group (2007). Schoolyard planing and design in New Jersey. Enhancing outdoor play and learning. Erişim tarihi: 05.04.2018, http://www.edlawcenter.org/assets/files/pdfs/facilities/SchoolyardPlanning_Design.pdf
- Oğuzkan, Ş. ve Oral, G. (2003). Okul Öncesi Eğitimi. Milli Eğitim Basımevi: İstanbul.
- Önal, Z. ve Adal, E. (2014). Çocukluk Çağında Obezite. Okmeydanı Tıp Dergisi 30(1).39-44. doi:10.5222/otd.suppl.2014.039
- Sobel, D. (2016) (Ed.). Nature preschools and forest kindergartens. The handbook for outdoor learnings. Redleaf Press: USA.
- Spencer, H. K. Ve Wright, P. M. (2014). Quality outdoor play space for young children. Young Children. 69(5), 28-36.

- White, R. (2004). Interaction with nature during the middle year: It's importance to children's development & nature's future. White Hutchinson Leisure & Learning Group: USA.
- Woolner, P. (2010). The design of learning space. Continuum International Publishing Group: London.
- Yenice, M. S. (2013). İlköğretim okulları için mekânsal yeterlilik analizi. Burdur örneği. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi. 28(3), 430-439.

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