A Study of Children's Outdoor Playground Designs Using Pictures

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Article History:
Received 20.06.2023
Received in revised form 29.09.2023
Accepted
Available online: Tarih15.10.2023

This study, aimed at examining outdoor playground designs for children through children 's drawings, was designed using a phenomenological design, which is a qualitative research method used to reveal and interpret individual perceptions or perspectives regarding a particular phenomenon. In line with the research objective, children aged 7-10, living in a neighborhood in the city center of Edirne, voluntarily participated in the study and were asked to draw a picture of their dream playground. In this context, 120 children were included in the study. The children 's drawings were analyzed using descriptive and content analyzes. Within the scope of descriptive analysis, codings were made in the categories of "Variety of Play Elements," "Vegetation Materials," "Equipment," and "Ground," based on the "design criteria for children's playgrounds" determined through literature review. Elements that were outside the "design criteria for children's playgrounds" were examined through content analysis and categorized as "play centers," "animals," "other people," "vendors," "sky elements," and "other." The coding was performed independently by three experts. The findings obtained from the children 's drawings were evaluated and discussed in conjunction with studies in the literature. Because of the analysis, it was found that children included risky play equipment in their drawings, and it was recommended that when designing children 's playgrounds, safe play equipment suitable for risky play should be included.

Keywords: Children's Drawings, playground,outdoor,design

INTRODUCTION

According to the Turkish Language Association (2023), the game has definitions such as "entertainment that develops abilities and intelligence, has certain rules, and serves to have a good time" and "any kind of competition based on agility, carried out to improve physical and mental abilities." When evaluated from the perspective of child development, it can be said that games have different meanings and functions beyond being an activity that enhances abilities and intelligence. Game researchers generally define the game in its broadest sense as "a voluntary participation, structured or unstructured, with or without rules, always enjoyable, supporting children's development and well-being, their primary task/occupation" (Huizinga 2006). Play plays a vital role in children 's holistic development, maturity, growth, and learning. Through play, children 's fundamental skills and individual abilities are supported, their interests emerge, and they are prepared for life through play activities. The positive impact of play on children 's development has been increasingly recognized by academics and educators worldwide, starting from birth (Heyi, 2020). Lillard (2015) suggests that children imitate the adults around them and adult roles in their play, indicating the importance of play in preparing them for adulthood. Play activities also have a multifaceted impact on children's social, emotional, physical, and language development and serve as an important tool in evaluating and supporting their development (Anderson-McNamee & Bailey, 2010). What was previously considered as activities where children simply pass their time or have fun, play is increasingly recognized worldwide by academics and educators as having a positive impact on children's development from birth onwards (Heyi, 2020).

Children engage in play activities in different physical environments, including homes, schools, and outdoor playgrounds (Tandoğan, 2014). The significance of outdoor playgrounds has been increasing (Tremblay et al., 2015). Several factors are believed to contribute to the growing importance of outdoor playgrounds. These factors include the increasing screen time for children, the decrease in natural play areas due to urbanization, and the need for spaces where children can release their excess energy, develop social relationships (Bento & Dias, 2017). It is widely acknowledged among experts in the field of child development that constantly playing in enclosed spaces has a negative impact on children 's development. Therefore, there is a need for well-designed playgrounds where children can play safely, engage in healthy interactions, and freely play (Duman & Koçak, 2013). MacQuarri, Nugent, and Warden (2013) reported that

children tend to play in a more controlled and structured manner in indoor settings, whereas they behave more flexibly in outdoor settings. They also observed greater diversity in children 's motor behaviors and quicker adaptation to the environment in outdoor spaces. Outdoor play areas also provide children with a wide range of sensory stimuli to experience. In outdoor play areas, children's visual perception expands, they can hear different sounds, touch different surfaces, and encounter various scents. The sensory diversity in outdoor play areas enriches children's inner and outer worlds (Xu et al., 2022). Wang and colleagues (2018) also report that outdoor play areas offer children the opportunity to experience natural play materials such as sand, soil, mud, and water.

In addition to the importance of outdoor playgrounds in children 's development, the play materials and designs of these outdoor spaces are also crucial (Taştepe et al., 2016). Senda (1992) emphasized the significance of the arrangement of outdoor playgrounds and the materials within them, stating that these materials constitute the starting point of children 's play, facilitate play, and should be designed to allow children to play freely without constraints. Often, outdoor playgrounds are designed by adults without considering what children desire in a play area. When children are not involved in the design of a play area and their preferences are not considered, it becomes more challenging for them to adapt to the play spaces (Çukur, 2011). Demir-Öztürk, Atmaca, and Kuru (2020) suggest that the most ideal environments for children are those that are organized according to their interests, expectations, desires, and needs, as these environments provide the best support for their development. Therefore, it is believed that children 's participation in the design of a play area would make it more attractive for play, enhance their developmental gains, and help uncover their emotions and thoughts.

Children use various means to express their emotions and thoughts, and drawing is a significant tool for externalizing their inner worlds. Through drawing, children naturally express their symbolic structures in a concrete form (Fazlıoğlu, 2012). Köseoğlu (2023) highlights that professionals working with children prefer children's drawings as a projective technique to gather information about children. Additionally, she emphasizes that children's drawings help professionals better understand children socially, emotionally, and cognitively.

This study examines outdoor playground designs for children through children 's drawings. As part of this objective, the children were asked to draw their desired playground. Children were provided with the opportunity to draw without any time restrictions or content-related guidance during the drawing sessions.. The drawings provide adults with an important opportunity to understand children 's emotions and thoughts. Outdoor playgrounds are environments where children engage with their peers through play, which supports their social, emotional, cognitive, motor, and language development. At the same time, children are able to release their excess energy while having fun in outdoor play areas and have the opportunity to get acquainted with natural play materials. The design elements of these spaces are considered important for children to voluntarily participate in play, sustain play, and establish healthy interactions with their peers. Therefore, examining children 's preferences for outdoor playgrounds through their drawings is important for enriching existing playground design criteria and exploring what children desire in these spaces that may differ from the existing designs.

METHOD

This study was designed using a phenomenological design, which is a qualitative research method used to uncover and interpret individual perceptions or perspectives related to a specific phenomenon (Baker, Wuest, & Stern, 1992).

Study Group

In line with the aim of the study, children between the ages of 6 and 9 years who lived in the city center of Edirne, were easily accessible, had parental consent to participate in the study, showed normal development, and expressed willingness to participate were included in the research. A total of 120 children who met these criteria constituted the study group.

Table 1. The distribution of children participating in the study according to gender and age

Gender	f	%
Girl	60	50
Boy	60	50
Age		
6	27	22.5
7	44	36.6
8	32	26.6
9	17	14.1

Table 1 presents the distribution of children participating in the study according to gender and age. Accordingly, 50% (f=60) of the participating children are girls and 50% (f=60) are boys. In terms of age, 22.5% (f=27) are 6 years old, 36.6% (f=44) are 7 years old, 26.6% (f=32) are 8 years old, and 14.1% (f=17) are 9 years old.

Data Analysis

The children 's drawings were analyzed using descriptive and content analyzes. Descriptive analysis is a type of qualitative data analysis that involves summarizing and interpreting data obtained through various data collection techniques based on predetermined themes (Yıldırım & Şimşek, 2011). Based on a review of local and international literature, design criteria for children 's parks were determined, and descriptive analyzes were conducted according to these criteria.

The categories identified within the scope of descriptive analysis are "variety of play elements," "materials of play elements," "vegetation," "equipment," and "ground" (Wortham et al., 1990; Moore et al., 1992; Sabri & Abbaspourasadolah, 2014; Arslan & Yavuz-Özalp, 2016; Lynch et al., 2019). The category of "materials of play elements" was not considered because it cannot be objectively evaluated.

In content analysis, categories are subsequently created on the basis of the examination of the data (Yıldırım & Şimşek, 2011). After the children 's drawings were analyzed using descriptive analysis, elements that could not be classified through descriptive analysis were categorized using content analysis. Because of the content analysis, categories such as "animals," "vendors," "other people," and "sky elements" were established for classification.

Reliability of Data Analysis

Miles and Huberman (1994) emphasized that in qualitative research, the consistency between independent coders should be close to 80% for reliability. They suggested that the consistency ratio can be calculated by dividing the total number of agreed codes by the total number of agreed and disagreed codes. In this study, both descriptive and content analyzes were independently conducted by two researchers. The codings were entered into a data analysis form prepared by the researchers, and in the second step, the consistency between the codings of the researchers was calculated. According to the results, the consistency between coders was over 90% for both descriptive and content analyzes.

FINDINGS

The findings obtained from the analyses are presented in Tables 2 to 9.

Table 2. Descriptive analysis results regarding the types of play elements in children 's drawings.

Number	Play Elements	f	%	Number	Play Elements	f	%
1	Slide	103	85.8	8	Spring Rider	5	4.1
2	Swing	86	71.6	9	Climbing Net	2	1.6
3	Seesaw	57	47.5	10	Water Slide	1	0.83
4	Carousel	24	20	11	Train	1	0.83
5	Pull-Up Bar	10	8.3	12	Ball Pit	1	0.83
6	Trampoline	10	8.3	13	Gondola	1	0.83
7	sandbox	10	8.3				

Table 2 presents the descriptive analysis results regarding the types of play elements in children 's drawings. It can be observed that the children included 13 different play elements in their drawings. The types of play elements are as follows: slide (f=103; 85.8%), swing (f=86; 71.6%), seesaw (f=57; 47.5%), carousel (f=24; 20%), pull-up bar (f=10; 8.3%), trampoline (f=10; 8.3%), sandbox (f=10; 8.3%), spring rider (f=5; 4.1%), climbing net (f=2; 1.6%), water slide (f=1; 0.83%), train (f=1; 0.83%), ball pit (f=1; 0.83%), and gondola (f=1; 0.83%).

Table 3. Descriptive analysis results regarding amenities in children 's drawings.

Number	Amenities	f	%	Number	Amenities	f	%
1	Bench	9	7.5	11	Tower	2	1.6
2	Signboard	4	3.3	12	Fence	2	1.6
3	Chair	3	2.5	13	Trash Bin	1	0.83
4	Fountain Pool	3	2.5	14	Sports Athlete	1	0.83
5	Toilet	2	1.6	15	Clubhouse	1	0.83
Number	Amenities	f	%	Number	Amenities	f	%
6	Lamp	2	1.6	16	Swimming Pool	1	0.83
7	Football Field	2	1.6	17	Netted Goal	1	0.83
8	Doghouse	2	1.6	18	Race Car Track	1	0.83
9	Table	2	1.6	19	Bicycle Riding Track	1	0.83
10	Flag	2	1.6				

Table 3 provides the descriptive analysis results regarding the types of amenities in children 's drawings. It can be observed that the children included 19 different types of amenities in their drawings. The types of amenities are as follows: bench (f=9; 7.5%), signboard (f=4; 3.3%), chair (f=3; 2.5%), fountain pool (f=3;

2.5%), toilet (f=2; 1.6%), lamp (f=2; 1.6%), football field (f=2; 1.6%), doghouse (f=2; 1.6%), table (f=2; 1.6%), flag (f=2; 1.6%), tower (f=2; 1.6%), fence (f=2; 1.6%), trash bin (f=1; 0.83%), sports athlete (f=1; 0.83%), clubhouse (f=1; 0.83%), swimming pool (f=1; 0.83%), netted goal (f=1; 0.83%), race car track (f=1; 0.83%), and bicycle riding track (f=1; 0.83%).

Table 4. Descriptive analysis results for the type of plant material used in children 's paintings

Number	Plant Materials	f	%
1	Tree	44	36.6
2	Flower	21	17.5
3	Fruit Tree	15	12.5

Table 4 presents the descriptive analysis results of the types of plant materials used in children's drawings. According to the results, the children included 3 different types of plant materials. These are tree (f=44; 36.6%), flower (f=21; 17.5%), and fruit tree (f=12; 12.5%).

Table 5. Descriptive analysis results for the ground type in children 's paintings

Number	Ground Surfaces	f	%
1	Grass	71	**59.1**
2	Soil	11	**9.1**
3	Water	3	**2.5**

Table 5 presents the results of the descriptive analysis regarding the types of ground surfaces used in children's drawings. According to the findings, there are 3 different types of ground surfaces depicted by the children. These include grass (f=71; %59.1), soil (f=11; %9.1), and water (f=3; %2.5).

Table 6. Descriptive analysis results for the types of animals in children 's paintings

Number	Animals	f	%
1	Bird	29	24.1
2	Butterfly	9	7.5
3	Cat	6	5
4	Poultry	3	2.5
5	Bee	2	1.6
6	Bumblebee	2	1.6
7	Horse	1	0.83
8	Dog	1	0.83
9	Ladybug	1	0.83
10	Fish	1	0.83

Table 6 presents the results of the content analysis regarding the types of animal species depicted in the children's drawings. It can be observed that 10 different animal species are represented by the children. These include bird (f=29; %24.1), butterfly (f=9; %7.5), cat (f=6; %5), poultry (f=3; %2.5), bee (f=2; %1.6), bumblebee (f=2; %1.6), horse (f=1; %0.83), dog (f=1; %0.83), ladybug (f=1; %0.83), and fish (f=1; %0.83).

Table 7. Descriptive analysis results of vendors in children 's paintings

Number	Vendors	f	%
1	Balloon Seller	7	5.5
2	İce Cream Vendor	3	2.5
3	Cotton Candy Seller	3	2.5
4	Toy Seller	3	2.5

Table 7 presents the results of the content analysis regarding vendors depicted in children 's drawings. It can be observed that 4 different types of vendors are represented by the children. These include balloon seller (f=7; %5.5), ice cream vendor (f=3; %2.5), cotton candy seller (f=3; %2.5), and toy seller (f=3; %2.5).

Table 8. Descriptive analysis results for other people in children 's paintings

Number	İndividuals	f	%
1	Peers	58	48.3
2	Parents	11	9.1
3	İllusionist	1	0.83

Table 8 presents the results of the content analysis regarding other individuals depicted in the children's drawings. It can be observed that the children included 3 different individuals. These are peers (f=58; %48.3), parents (f=11; %9.1), and an illusionist (f=1; %0.83).

Table 9. Descriptive analysis results of sky elements in children 's paintings

Number	Sky Elements	f	%
1	Sun	80	66.6
2	Cloud	69	57.5
3	Aircraft	6	5
4	Aircraft	3	2.5
5	Star	2	1.6

Table 9 presents the results of the content analysis regarding the sky elements in children 's drawings. It can be observed that the children depicted 5 different sky elements. These are sun (f=80; %66.6), cloud (f=69; %57.5), rainbow f=6;%5), aircraft (f=3; %2.5), and star (f=2; %1.6).

RESULTS AND DISCUSSION

This study examined children's outdoor playground designs through children 's drawings using qualitative research methods, specifically phenomenological design. Children were asked to draw a picture of their imagined playground, and the drawings were evaluated through descriptive and content analyzes. Based on the conducted analyzes:

- In terms of the variety of play elements depicted in the children 's drawings, it can be observed that they mostly included elements such as slides and swings, while elements with climbing and jumping functions, such as monkey bars and climbing ropes, were less represented. In addition, children 's drawings indicated a desire for playgrounds with a rich variety of play elements and the inclusion of natural materials such as sand and water for play. They also expressed a preference for including amusement park elements (such as gondolas, trains, water slides, etc.) in playgrounds, which they had seen in different entertainment environments outside traditional parks.

Picture 1. Example of a Risky Game Element

In line with the findings of Aklıbaşında, Tırnakçı, and zhanc (2018), who evaluated children 's playgrounds in their research, slides and swings were the most commonly observed types of play elements in playgrounds, whereas elements such as climbing structures, jumping areas, and monkey bars were less prominent. Ylmaz and Bulut (2003) also reported that water is an indispensable play tool for children, highlighting the importance of incorporating water as a play element in playgrounds.

Children 's pictures have also been found to attract attention to the need for game elements in which children can play riskier games. In their research conducted through observation and interviews on children 's playgrounds, Wenger et al. (2021) revealed that children have a desire to climb as high as possible on climbing equipment in playgrounds.

Picture 2. Example of Accessories

In children 's pictures, it is observed that they desire the inclusion of diverse equipment, in addition to the equipment they can encounter in playgrounds, that caters to their interest in sports activities (such as swimming pools and bicycle tracks) and esthetic elements. Wenger et al. (2021) reported that typically developing children in playgrounds prefer riding bicycles and navigate around play elements with their bicycles. Aklıbaşında, Tırnakçı, and Özhanc (2018) state that the availability of areas where children can use vehicles such as bicycles, skates, and electric cars has become a necessity in outdoor children 's playgrounds. Children depict outdoor play areas surrounded by natural materials, where they can be in close proximity to nature. Outdoor play areas are shown with surfaces covered in natural materials such as soil, sand, water, and grass. Duman and Koçak (2013) state that the presence of vegetative elements in children 's playgrounds contributes to their physical, cognitive, and emotional development.

The research also found that children desire the presence of vendors such as balloon sellers, cotton candy stands, and ice cream vendors, which are typically encountered in their daily lives and in different natural environments, in outdoor play areas. They also envision playing with their peers in a fun play environment and having a play area where they can reach their parents for safety. According to the UNESCO (2012) report, children 's play areas should be designed from a modern perspective, incorporating elements that allow versatile use, in addition to traditional, standard, and fixed elements. Evaluating the findings, it emerges that children desire outdoor play areas that include modern design elements, alongside traditional and standard ones, where they can be in harmony with nature, engage in sports activities, and meet their basic needs. Recommendations:

- This study included children between the ages of 6 and 9. Research designs involving younger age groups of children can also be developed.
- In this study, children were asked to draw the playgrounds they imagined. They can also be asked to compare their envisioned playgrounds with existing ones.
- Outdoor play areas can include game elements that allow children to play riskier games while ensuring their safety.
- The space allocated for children 's play areas can be expanded.
- Children 's play areas can be considered not only as play areas but also as living spaces, and the equipment can be diversified with this in mind.
- Local authorities can establish children 's councils within their internal dynamics to create child-friendly play areas and consult children 's opinions in the planning of play areas.

Declarations

Conflict of Interest

No potential conflicts of interest were disclosed by the author(s) with respect to the research, authorship, or publication of this article.

Ethics Approval

The formal ethics approval was granted by the Social and Human Sciences Research and Publication Ethics Committee of Trakya University. We conducted the study in accordance with the Helsinki Declaration in 1975.

Funding

No specific grant was given to this research by funding organizations in the public, commercial, or not-for-profit sectors.

Research and Publication Ethics Statement

The study was approved by the research team's university ethics committee of the Trakya University (Approval Number/ n 05/19). Hereby, we as the authors consciously assure that for the manuscript " A Study of Children's Outdoor Playground Designs Using Pictures" the following is fulfilled:

- This material is the authors' own original work, which has not been previously published elsewhere.
- The paper reflects the authors' own research and analysis in a truthful and complete manner.
- The results are appropriately placed in the context of prior and existing research.
- All sources used are properly disclosed.

Contribution Rates of Authors to the Article

Gökçen İLHAN ILDIZ's contribution rate is 60%, and Emine AHMETOĞLU's contribution rate is 40%.

Note

This study was presented to the International Congress of Early Childhood Outdoor Project (ICECOP) as an oral presentation

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