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**THE EFFECTIVENESS OF OUTDOOR SPACES
DESIGNED FOR THE PLAYING OF CHILDREN
IN İSTANBUL**

Elaf Basha FARIS

Master's Thesis

Supervisor

Asst. Prof. Dr. Erinç ONBAY

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The thesis titled THE EFFECTIVENESS OF OUTDOOR SPACES DESIGNED FOR THE PLAYING OF CHILDREN IN ISTANBUL prepared by ELAF FARIS and submitted on 03/07/2024 has been **accepted unanimously** for the degree of Master of Science in Architecture.

Asst. Prof. Dr. Erinç ONBAY

Supervisor

Thesis Defense Committee Members:

Asst. Prof. Dr. Erinç ONBAY

Department of Interior
Architecture and
Environmental Design,
Altınbaş University

Asst. Prof. Dr. Can UZUN

Department of Architecture,
Altınbaş University

Asst. Prof. Dr. Hasan POLAT

Department of Architecture,
Fırat University

I hereby declare that this thesis meets all format and submission requirements for a Master's Thesis.

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Elaf Basha FARIS

Signature



DEDICATION

Thank you so much to my family, especially my father who always encourages and supports me, thanks to my sister Nawras for being there for me, my beloved niece Malak, my teacher Ahmed Alshareed, thank you to my advisor Dr. Erinç and for all of the children that have inspired me throughout the years for opening my mind and reminding me that anything is possible.



ABSTRACT

THE EFFECTIVENESS OF OUTDOOR SPACES DESIGNED FOR THE PLAYING OF CHILDREN IN ISTANBUL

FARIS, Elaf Basha

M.Sc., Architecture, Altınbaş University,

Supervisor: Asst. Prof. Dr. Erinc ONBAY

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Creating spaces that not only benefit but also motivate play provides opportunities for child development and growth. Child neural networks are programmed to develop a comprehension of concepts like space and time through their play space explorations, behaviours, reactions, sound, and toys. This thesis investigates how the constructed environment, informal play, and the natural environment affect the wellness of kids, as well as the role of architects in designing publicly accessible play spaces. There is a design gap in comprehending the complicated population of users and the design components that impact their health. The study examines play environments, and infrastructure. It presents four instances of community-built playing environments, utilizing the site inventory, player observations, child photo taping and Analysing these playgrounds in light of design criteria. The research study's findings demonstrated that children's developmental needs are directly impacted by the limitations of fixed playground equipment. According to the research results, children's social and physical development is supported in some way by traditional play structures. Nevertheless, children's cognitive and emotional development is not facilitated by this type of equipment.

Keywords: Play, Playground Design, Outdoors, Children, Istanbul.

ÖZET

İSTANBUL'DA ÇOCUKLARIN OYUN OYNAMASINA YÖNELİK OLARAK TASARLANAN DIŞ MEKANLARIN ETKİNLİĞİ

FARIS, Elaf Basha

Yüksek Lisans, Mimarlık, Altınbaş Üniversitesi,

Danışman: Asst. Prof. Dr. Erinc ONBAY

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Sadece fayda sağlamakla kalmayıp aynı zamanda oyunu motive eden alanlar yaratmak, çocuk gelişimi ve büyümesi için fırsatlar sağlar. Çocuk sinir ağları, oyun alanı keşifleri, davranışları, tepkileri, sesi ve oyuncakları aracılığıyla uzay ve zaman gibi kavramların anlaşılmasını geliştirmek üzere programlanmıştır. Bu tez, inşa edilmiş çevrenin, gayri resmi oyunun ve doğal çevrenin çocukların refahını nasıl etkilediğini ve ayrıca mimarların halka açık oyun alanları tasarlamadaki rolünü araştırmaktadır. Karmaşık kullanıcı nüfusunu ve sağlıklarını etkileyen tasarım bileşenlerini anlamada bir tasarım boşluğu vardır. Çalışma, oyun ortamlarını ve altyapıyı inceler. Site envanterini, oyuncu gözlemlerini, çocuk fotoğraf çekimini ve bu oyun alanlarını tasarım kriterleri ışığında analiz ederek topluluk tarafından inşa edilmiş dört oyun ortamı örneği sunar. Araştırma çalışmasının bulguları, çocukların gelişimsel ihtiyaçlarının sabit oyun alanı ekipmanlarının sınırlamalarından doğrudan etkilendiğini göstermiştir. Araştırma sonuçlarına göre, çocukların sosyal ve fiziksel gelişimi geleneksel oyun yapıları tarafından bir şekilde desteklenmektedir. Bununla birlikte, çocukların bilişsel ve duygusal gelişimi bu tür ekipmanlar tarafından kolaylaştırılmamaktadır.

Anahtar Kelimeler: Oyun, Oyun Alanı Tasarımı, Açık Hava, Çocuk, İstanbul.

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1. INTRODUCTION

Play is essential for early childhood mental growth, according to specialists in the field of child development. A research in 1978 discovered that children's mental skills functioned at a greater level immediately following playing compared to after nonplaying functions (Johnson, Christie, and Yawkey, 1999, 45). Continuous effects of play may be difficult to evaluate since other growth variables, like educating style and parenthood, emerge gradually. comprehending the way, a child grows psychologically and in society requires thorough observations as well as understanding of one child compared to a single standardizing test which can be administered to everyone. Nevertheless, play clearly helps in the growth of psychological and social notions such as collaborating, occasionally rejection, and winning over others (Mann, 1996, 42).

Adults have defined the word "play" in a variety of ways, each of which characterise the activity of play. It has been called "a continuously creative process" (Aaron and Winawer, 1965), "an approach to actions, not a type of activity" (Moyle, 1989), "a mimicry of adult's actions getting children more closely to the adult world" (Noschis, 1992), "scientific investigation carried out by children" (Eible-Eibesfeldt, 1970), and "the natural world of childhood" (Prout and James, 1997).

(Pellegrini and Smith, 1998, Coalter and Taylor, 2001), as well as others have proposed that play is too complicated for one definition, while some have determined that descriptions of play, which encompass a wide range of activities and actions, may "serve an array of goals" (Bennett et al., 1997). On the other hand, there is a compelling counterargument that some studies deprived of its significance, authority, and comparative advantage in the absence of a definition (Cattanach, 1998).

Kids and teenagers typically invest 4-6 hours every day on PCs, watching television, and video gaming. (Alliance for a Healthy Generation, 2007). Nearly one-fourth of children aren't participating in free play activities outside (Alliance for a Healthier Generation, 2007).

Childhood weight gain has recently gained attention in the media, The United States Obesity Organization (Ogden et al., 2006) reports an all-time high the number of obese children and teens.

Overweight children's cartilages and bones experience stress during essential development periods, leading to bowing, suffering, growth, and restricted range of movement. (American Obesity Association, 2002).

Development can be promoted by designing spaces that are not only supportive of play but also actively promote it. Young children discover the world of people and things through play, which is their passion. They learn about limits and the difference between what functions and doesn't. The growth and development of the brain depend on play. Their brain synapses become wired to comprehend ideas like dimension and time, this "wiring" results from a pruning procedure. A child's brain has roughly twice as many synapses—connections between neurons—between the ages of 2 and 10 as it will in adults. These synapses are at some point discarded, or trimmed, if whenever they are not used. The life experiences and surroundings of a child influence which synapses will maintain and which will eventually be trimmed. For this reason, play and the physical environments are essential to the growth of young children. Studies suggest that restricting free play in nature may increase chances of anxious behavior, sadness, fear, anger, cognitive problems and growth delays caused by anxieties. It has been proposed that four components are necessary for the formation of a kid's play environment: an area to play, a time to play, colleagues to interact with and what the kid is actually doing (Senda 1992). In his concept of mental growth, Piaget identified as this period the phase of pre-operational development, in which a child grows and expands his understanding via experience and exploration of his surroundings (Piaget, 2013).

In regard to play, modern play areas aren't all that beneficial, playground equipment fails to offer children sufficient challenges or imaginative chances for playing. Although these playground constructions are entertaining to utilize, their repetitious designs discourage children from using their imaginations. Playground structures that are set in materials and lack flexibility are quickly becoming uninteresting to children. Typical type playground equipment is primarily made for assisting children enhance motor abilities. Playgrounds ought to enhance children's mental, psychological, and physical development. The purpose of this thesis is to examine how play structures affect children's growth and to propose new viewpoints on playgrounds designs. However, weaknesses in outdoor play constructions will be highlighted. This thesis aims to comprehend the effect of playgrounds construction on children's cognitive abilities and growth in addition to learning about what children practice on outdoor areas.

This thesis investigates what are the element that make better play spaces for young children. Further details about the development of the play movements and relevant studies on children's well-being and free play will be collected and examined. In order to determine present developments in play space design, player needs and particular health benefits, four constructed public playgrounds in Istanbul will also be examined.

The information gathered will contribute to clarify the aspects of design required to create a play area that is effective in terms of health. To improve the growth and cognitive health of children, particular criteria will be used to give architects and designers efficient insight into creating well-designed public play areas in community and architectural projects. This thesis eventually aims to clarify (to designers) the advantages of free play in the natural environment for children's healthy growth and to motivate them to contribute to the solution by advocating for the implication of public playgrounds in designs.

In the second chapter, the history of playgrounds and its types are studied, In the third chapter, types of play and the advantages of playful activities for children, In the fourth chapter design criteria are mentioned, a case study is carried out to investigate how playground design affects children's growth and the section of analysis and discussion results in up the fifth chapter and the thesis's conclusion is covered in the sixth chapter.

1.1 METHODOLOGY

A qualitative research approach was used to collect data, evaluate it, and make conclusions for this research. To obtain a dependable and accurate examination of physical activity environments, four playgrounds from four distinct districts are chosen and are observed using photography, videography, and taking notes in order to attain the diversity in the data, identifying whether a space offers children adequate possibilities for their social, physical, mental, and psychological growth is the primary objective of the research.

Herrington's seven criteria and Şensoy & İnceoğlu guidelines were used for the purpose of analysing the playgrounds from an architectural perspective and determining their suitability for children and their conformity with the required standards, to quantify the elements of physical environment and assess the outcomes. it will take into account whether a site supplies users gathering places, opportunities for creativity, exploring, and discovering, opportunities for fine and gross motor movements,

The framework of qualitative analysis is prepared using information from the existing literature review and prior observations. Observations are carried out methodically. The information obtained from the literature review is utilized to prepare the observing sheet. Parten's (1932) social participation categories and Piaget's (1962) categorization of play types (functional, construction, symbolic & collaborative, solitary, discovery and self-focused play) was used for the purpose of analysing and identifying the types of play stimulated by the architectural designs of playgrounds. Therefore, the availability of different types of play affects the psychological health of the child, as each type of play benefits a specific aspect of the child's health, such as balance, a sense of accomplishment, developing the ability to think mentally and build models and gross motor skills. The information gathered from each playground offers an understanding of the ways in which the design of the outdoors play areas affected the well-being of children. Written explanations of children's play patterns throughout the day were combined with observations to collect data for this research. Whenever a target area was scanned, the predominant play types of activity that the majority of the kids were participating in was observed. Regarding the numbers of children, 29 were observed at Deprem playground, 17 at Bulent playground, 65 at Zorlu playground and 41 at Botanic playground for a total of 152 children playing.

2. HISTORY OF CHILDREN PLAYGROUNDS

A child is a term utilized for an individual who is extremely young. Using typical psychological changes between the ages of 6 and 17. According to this method, children interactions within their city surroundings will ultimately be influenced by their physiological growth and enhancements. This is frequently noticed in children's space, consciousness, goals, and behaviours. Children (between the ages 0–17 years) comprise about 25% of the worldwide population. Over a billion children live in cities and towns, with the vast majority of them in developing countries. Plenty of significant variations among nations in terms of kids urban living conditions. Investigating this problem may demonstrate the existence of various elements that affect a city's capacity to provide the needed living-built atmosphere for its children such as society, finances, growth initiatives and standards. According to UNICEF's State of the globe's children reports, Children in many countries are at risk of falling ill in terms of lack of education, security and well-being. Absence of the necessary urban setting in an urban centre can negatively impact kids' day-to-day activities, development, and educational possibilities (Hoshiair Nooraddin,2020). The earliest cultures of Greece, the city of Rome, and Babylon's established a capital centre as the country's societies core, with three major features: power, religion, and industry. Each of these functions were requested, enforced, and arranged by their leaders, the elite categories, and the heads of religion. It led to the creation of various kinds of constructions, architecture and open areas, as well as their uses. As a result, the city's centre became a public reserved for mature individuals. Its content was tailored to the interests and lifestyle of adults. The structure expressed the older people comprehension of an environment and place, as well as their imaginings and perceptions of societal desires. Throughout this procedure, the town made no comparison or comparable concerns for children. past in history indicate that kids utilized exactly the same constructions, locations, and buildings as adulthood as they grow up. Businesses regions, bazaars, public bathrooms, open areas, places of worship, and paths were some examples. The adult individuals built surroundings was children reality, despite the fact that certain academics identified the existence of few buildings that could be taken into account children aspects (Hoshiair Nooraddin,2020).

While the conditions of these initial towns shifted over the years, modern city buildings have undergone significant transforms as a consequence of the early of the twentieth century shifts in urban design and building design. The two primary shifts that gave rise to modernism in the first decade of the twentieth century were Functionalism and worldwide building design. via the adoption of new urban design and construction rules, their goal led to reshape the community. Their ruthless approaches to urban development, space formation, and construction design have drawn criticism. Their comprehension of the societal and environmental issues implications of the design's values, encompassing the requirements of children, appears to be restricted. A few many years later, the government and city planners have realized the drawbacks of oversimplifying urban problems (Hoshiair Nooraddin,2020).

The Opies came to the ground-breaking conclusion that "in which kids are, is the place where they play" (Opie and Opie 1969, 10) after studying children's activities and play in various settings. Numerous studies conducted due to this work, in the 1960s have shown that kids play in a wide range of built-environment spaces, some of which offer issues in addition to societal and physical in nature possibilities (see, for instance, Christensen and O'Brien 2003; Cunningham and Jones 1999; Hart 1979; McKendrick 2000; Moore 1986; Ward 1978; Woolley 2007). Although a few of these locations are referred to as "playgrounds" because they are made particularly for kids to interact in, the others are just locations in which kids can hang out.

however, playgrounds are areas where kids perceive play as possible or "affordable" (Gibson 1979). In the nineteenth century, playgrounds were first introduced and developed in the Western world. "Outdoor gymnasias," which were first established in America in 1821, primarily featured interior gymnastic equipment set up outdoors (Frost 2006). The creation of standalone apparatus, or what is currently referred to as set play equipment, came next (Frost 1992). The primary objective of the summertime playground and holidays educational system established by the New York City Board of Teaching in the beginning of the nineteenth century, was to give children a place to play and get some physical activity. The Playground Organization of America afterwards worked to establish playgrounds all throughout the United States (Gagen 2004). This was followed by a growing trend regarding the final decades of the nineteenth century—dubbed the "era of specialization" of land usage-of allocating land for particular uses (Aaron and Winawer 1965).

The Burberry's Street Recreation Grounds in Birmingham opened its doors in 1877, marking the establishment of the initial "playground" in England (Heseltine and Holborn 1987). Associations of Play arranged games in urban parks in places like London, and community organizations in Manchester created recreation areas that were eventually taken over by the regional government's Parks Committee. In England, there were more playgrounds for children in outdoor spaces among the two World Wars. These playgrounds had different personalities. Kids could play in expansive sand regions in certain parks in London; Heseltine and Holborn (1987, Fig. 143, p. 135) provide an instance of a place like this.

The National Playing Field's Association's early work and the Physiological Training and Recreation Act of 1937 made it possible for local governments and non-profit groups to supply children's playgrounds and playing sectors (Heseltine and Holborn 1987). The 1938 implementation of the Avenue Playgrounds Act made play avenues possible. Following World War II, there were fewer open areas for children to play because destroyed areas were rebuilt and there was more traffic on the streets (Bengtsson 1974; Miller 1972). Many playgrounds have already been built in parks, places to play, residential regions, and other public spaces due to World War II. The Danish playground Emdrup served as an inspiration for the development of adventure playgrounds in England. In 1943 the Emdrup playgrounds made of junk was initially opened. Motivated by the efficacy of similar areas in Stockholm, the London counties Council's Parks Department launched the country's first "play park" in an open park in London in 1959. Play parks offered regions for various actions such as sketching and board games such as playing chess and drafts because they were separated into portions using low fences made of wood. A third region offered space for group games and activities, an additional area catered to the amusement of younger kids, and a challenging area offered chances for building, swaying from trees, and other rougher activities (Lady Allen). Those play parks, which at first employed play managers, eventually started to resemble adventure playgrounds. Playgrounds in the US have become gradually standardized, particularly during the 1980s. This is mainly due to numerous lawsuits, which have cost cities and manufacturers millions as a result of the injury (Heller, 2020; Rosin, 2014). In 1981, the Consumer Products Safety Commission released guidelines for playgrounds safety, extensively embraced in the United States (Frost, 2004; Heller, 2020). These new norms and guidelines began to control the dimensions and heights of equipment, as well as establishing guardrails and limiting climbing. As these play areas came to be

standardized, they ended up being so identical that attending to different play areas at different parks was not much different, always figuring the identical slides at the similar heights provided to similar playground parts and equipments (Rosin, 2014). After the 1990s, while standardized playgrounds have become prominent, there was a valuable effort to improve play opportunities for individuals of all abilities by via ‘plays capes’ by integrating constructed and natural components, nature play areas can provide possibilities for new ways to discover (Heller, 2020).

2.1 TYPES OF PLAYGROUNDS

Playgrounds come in three primary varieties: traditional, contemporary, and traditional. The most common kind of playgrounds are traditional ones, which include swings, seesaws, slides, and other common features, the term "composite play structure" refers to the contemporary variety, which consists of a number of elements and equipments kinds connected together to create a structures. And the exploratory or adventurous creative type uses a variety of materials, such as junk, water, vegetation, and sand. This assortment of elements offers a chance for play that promotes creativity, discovery, and material manipulation (Branislava Stoiljković,2006).

2.1.1 Adventure Playgrounds

Beyond just being a place for children to play, an adventure playground is more than that. A specific conceptual and philosophical perspective on kid’s role in society and the concept of childhood itself is embodied in this physical form. In August 1943, the initial adventure playground was created and constructed in Emdrup, Denmark. It was designed by landscape designer C. Th. Sorensen (BURKHALTER, G. ,2016).



Figure 2.1: Emdrup Playgrounds (canadaplays.wordpress.com).

This first adventure playground covered 7,000 square meters in total and was encircled by a fence made of wires perched atop an earthen bank that was six feet tall. When the kids first arrived at Emdrup, they observed an empty patch of dirt with a few patches of grasses, a lot of construction supplies like wood, timbers, stones, panels, and implements such as saws and hammers, but no climbing frames, slides, swings, or other common playgrounds equipment.

In 1953, the National Playing Fields Association—an umbrella group in England that supervised the growth of different children-friendly play spaces—offered a description of adventure playgrounds, emphasizing their differences from "creative, or junk playgrounds." Adventure playgrounds were described as "either a rough and undulating location, most likely an overgrown quarrying, or a site that has not been emptied and levelled but that remains with its natural features- kids playing games over collapsed tree trunks and up and down miniature hills and hollows" (Benjamin, NPFA). Junk playgrounds were defined as "mainly targeted sites where stones, timber, and different materials have given the children an innovative outlet for constructing barriers, forts and generally utilizing their imagination" (Benjamin, 1974,21).

2.1.2 Contemporary Playgrounds

They are thoughtfully designed to provide children with numerous opportunities to exercise their physical, mental, and social muscles (Branislava ,2006).

They are not high-priced and more intriguing and challenging. Additionally, they encourage the instructional forms of playing (Branislava Stoiljković,2006). architect Isamu Noguchi's designed some of contemporary playgrounds, they were simple enough to allow for creativity and wonder. The swings, monkey bars, and jungle gym are examples of items with a single usage, but children are adept at finding ways around that. Someone will climb on top of a swing if you place them on one. Children consistently come up with inventive ways to mishandle objects. Indirect play was Noguchi's concept. Playing freely and without direction. They don't offer advice on how to handle them. There are numerous applications for them. Not that he didn't create playground equipment—there is a certain types of equipment at Plays capes. However, he makes an effort to make them a little bit more open, broader, and complicated (Dakin Hart,2021).



Figure 2.2: Children In Piedmont Playground, Atlanta, 1976 (pinterest.com).

Playgrounds, serve as an instructive introduction to forms and functions; they are basic, enigmatic, and evocative." Noguchi had a really good idea that playgrounds shouldn't be built like military exercise apparatuses for a boot camp that is cheaply run, he believed that children ought to view the environment as a magnificent and intricate place, much like man did when he first arrived on Earth (Alexandra Lange,2016).

Another instance is the city gather playground in China, contains featureslike the sliding feature of the "deer home", colourful paved terrain, see-saws, and exercise equipments, the play area combines parent-child interactions, recreational actions, and socializing possibilities for individuals (Liliana Alvares,2023).



Figure 2.3: The City Gather- China By Dean Design (indesignlive.com).

2.1.3 Traditional Playgrounds

A traditional playground typically consists of a slide, swings, climbing frames, and seesaws. It is found in neighbourhood parks and schools. Studies have shown that traditional playgrounds receive little use and are vacant for at least 88% of the time (Wade, 1968).

It seems that traditional playgrounds benefit the neighbourhood. Playgrounds from the 1870s are similar in design to those found today, based on Aaron and Winawer ,1965. Traditional playgrounds are defined as open, level areas with concrete pavement encircled

by a high fence. Typical equipment consists of climbing frames, swings, seesaws, slides, and balance beams. Cemented in place, the majority of the materials are made of metal. Pergolas to block the sun, drinking fountains, and restrooms are typically absent (Aaron & Winawer, 1965). Though they don't provide many chances for cognitive and social growth, they do meet the need for physical activity. These playgrounds restrict the amount of time that children can spend Outside and focus their attention on the features of the standard equipment, depriving them of the opportunity to explore the outdoors (Hayward D.1974).



Figure 2.4: An Example Of Traditional Playgrounds Design (linkedin.com).

The most popular types of equipments for the traditional playground are:

a. Slides

Slides are undoubtedly one of the most popular playground features (Heseltine & Holborn, 1987). Stainless steel slides are much more maintenance-free and long-lasting than plastic slides, even though they require a larger initial financial investment (design standards for urban infrastructure book).

A youngster may play with other children for the purpose of using the slide. Working with others is a procedure that includes everything from learning how to wait their turn before climbing the steps to waiting at the top and ensuring that other children are clear from the bottom. This helps your child grow in their ability to share, be patient with someone else, and take their turns (Kim Hart,2018).



Figure 2.5: One Of The Examples For Slides (playlsi.com).

There are numerous health advantages for children who use slides. Their arms and legs get stronger as they work their way up the ladder, and having to wait at the top promotes balance, coordination, and spatial awareness. As they adjust to new situations and learn to navigate them with those around them. Children also develop their spatial orientation when they reach the bottom of the slide and choose how to land (Kim Hart,2018).

b. Swings

Among the generally static playthings that individual finds in playgrounds, swings offer a dynamic play experience requires a wide range of abilities, including balancing, leg pumps hand gripping, and the visual stimulation of switching back and forth and viewing objects from a different perspective. Stronger muscles and improved hand-eye coordination result from children's highly developed sense of balance and movement. Increased vestibular awareness and inner ear balance contribute to increased body awareness (Tracy Trautne ,2018).



Figure 2.6: One Of The Examples For Swings (ubuy.com).

There are two varieties of standard swings: single and multi-bay. It suggests to use no more than two multi-bay swings; separated single swings reduce the risk of collision incidents. There requires to be an impact-absorbent surface included. Group swings are useful for promoting social development. They work most effective when enclosed in an impact-absorbing surface that is within the suggested minimal use zone. Cantilevered swings offers a great way to attract older kids away from toddler areas, these swings are very popular for them (Holborn & Heseltine, 1987).

c. Scramble and scaling walls

Using scrambling walls constructed of chains, plastics molds, wood, metallic material, ropes, or a different material is an alternative way to gain access to platforms deck. In addition to providing physical activity, playgrounds climbing frames can support kid's development of risk evaluation and solving issues skills. With this type of playground equipment, children need to be resourceful to get past any obstacles. This helps youngsters develop critical and innovative thinking skills, which are useful in a variety of situations. It is also excellent for encouraging cooperative play and socialization. children can cooperate to manoeuvre the playground apparatus (Martell,2023).



Figure 2.7: One Of The Examples For Scaling Walls (terraboundsolutions.com).

Moore and his associates emphasized the necessity of equipment heights limitations in order to lower fall-related accidents. The kind and condition of the shock absorbent surface is one of the four key variables they mentioned for determining a climber's essential height, Position, User group and Capacity to keep the surfaces and equipment in beneficial condition (1992, Moore et al.).

d. Tunnels

Tunnels can be positioned above or below ground. When a tunnel is elevated, the play area's layout for the entry and exit points should have suitable safety panels to keep kids from

climbing to the top of the structure. Youngsters may enjoy their playtime repeatedly crawling down the tunnel or pretending to be drivers of supersonic sports cars.



Figure 2.8: One Of The Examples For Tunnels (duncanandgrove.com).

Crawling essentially gets all of the sensations humming and ready for actions, so it offers both physical and sensory benefits. Additionally, crawling strengthens the foundation of reflex strength—the strength that is innate in all people. Walking with a proper gait is ensured by the coordinated movement of their hips and shoulders (Tim Anderson,2014).

e. Monorail and track riders

The main purposes of monorail and track riders is to improve upper body strength and coordination. For young children with immature muscular-skeletal growth, they might potentially be dangerous. Little kids should not use them; its suitable equipment for youngsters over the age of five.

Track ride constructions must be positioned inside the approved soft-fall play zone to reduce the chance of accidents involving riders or bystanders. It is preferable to have landing and take-off decks at both ends since they minimize the chance that soft fall will be dislodged from this crucial fall zone (design standards for urban infrastructure book).



Figure 2.9: One Of The Examples For Monorail (mammoetplay.com).

the Monorail rail has been used as an indoor playground and theme park since the late 1960s in the Netherlands. The attraction is available at a number of playgrounds, theme parks,

family entertainment parks, and campgrounds. There are numerous benefits to the monorail play structure. Since the track is typically positioned at a very high elevation, the building doesn't take up a lot of space on the lower level. Additional attractions and walking route an area for animals, or an inside cube play structure can all be found in the open space beneath the Monorail. Another notable quality of the Monorail is its quietness; a trip around the track is nearly silent (Heseltine & Holborn, 1987).

f. Balance beams

Balance beams help with the development of coordination and balance. Balance beams provide solitary for small groups of kids with peaceful play chances. They are typically situated away from the louder play-structure elements. By keeping apart from the primary play structures, congested areas are avoided. (design standards for urban infrastructure book) They are helpful in children's development of balance abilities and a sense of mystery in play areas. It's also a great method to improve their coordination. Children can attempt whatever they are capable of, such jumping off, walking on one foot, or trying to stay steady



Figure 2.10: One Of The Examples For Balance Beams (playlsi.com).

while putting one foot in front of the other. They truly have a choice in how they want to play with them. Balance beams promote imaginative play in a similar way. While playing, children can put themselves in scenarios straight out of a storybook (James,2023)

g. Spring Animals

Animals that sway in the spring have multiple fulcrums. Both 0–4 year olds and 5–6 year olds like springtime animals. For the younger age group, local playgrounds ought to feature one or more spring animals to keep them engaged. The spring animal should be placed closest to a seat so that parents can easily supervise and engage with them. Brightly coloured cars and cheerful animals entice children to leap with enthusiasm and sway in time with their body language. children adore the spring riders because they provide happy

playtime that is very beneficial to their development. For children under five, the assortment of animals and vehicles on large springs is magnificent, and certain of the larger several springs parts can be utilized in any type of playing area. These little, comparatively static, and reasonably priced pieces operate effectively in combination with multi-play constructions play areas like shopping centres (Holborn & Heseltine, 1987).



Figure 2.11: One Of The Examples For Spring Animals (forksforum.com).

They have to be reliable enough to prevent damage caused by children using them improperly, but still comfortable for little children to navigate around on. They also demand to be made as improbable as possible for kids to slip fingertips or toes inside the wires or within the springs and a section of the swaying (Moore et.al., 1992).

3. PLAY OF CHILDREN

The United Nations recognizes play as a "right." It is crucial for child's growth and overall wellness. Although play is widely acknowledged as an important aspect of the lives of young kids, from an early age, Children start to interact with their surroundings around them by play, which helps these individuals to make sense of their experience. The elderly play to create interactions and interpretations, as well as for both physical and development stimulation (LEGO Foundation, 2011).

It has been represented for many years as a source of enjoyment and amusement for children with a unique set of regulations. Recent studies, however, suggest that play is a more complicated experiences that can assist both adults and children achieve a variety of objectives. According to Winnicott (1971), play is an imaginative activities and a means of self-discovery. "An individual who is a child or grown-up has the ability to be innovative and utilize their entire personality through play, and it is only through creativity that an individual finds themselves," he stated.

Play's role in children's growth is a topic that professionals in psychology and instructors are committed to explore. Among those experts in psychology is Jean Piaget, whose methods influenced a large portion of Western developmental investigations conducted in the course of the twentieth century. Although Piaget ,1964, highlighted the value of play for kids of all ages, he believed that play served primarily as a means of practicing recently gained ideas and abilities. Lev Vygotsky is a different psychologist whose theories had a significant impact on studies regarding child development. According to Vygotsky, Play is crucial to the growth of children, play is a societal as well as cultural activeness that enables kids to develop their full potential and assists them figure out the norms of social interactions (Vygotsky, 1998).

The popular psychologist Erik Erikson addressed how play can help children develop practical abilities and provide a form of self-care and fun. According to Erikson, having fulfilling social interactions helps people develop their personalities. In this manner, the child solves difficulties in the real world by using play as a tool. As the child's growth periods advances, so does the play, which incorporates reflections of past times, current, and subsequent years. Thus, it is possible to argue that playing games is essential to a positive growth of the personality. Erikson asserts that children necessity to play in order to fulfil

their demands for dominance and adaptation to their dreams (Orenstein & Lewis, 2020). In light of this, cognitive growth is understood to be a procedure in which kids first appropriate language and concepts from others during their playtime, and then they transform these concepts into cognitive structures that they can utilize and implement on their own (Brooker et al, 2004).

3.1 TYPES OF PLAY

There are many play methods that fall under different headings. The classifications of play utilized for designing criteria within this thesis have been taken from the growth and play concepts of Jean Piaget, M. Parten, S. Smilansky, and Brian Sutton-Smith. Evidence from recent studies on outdoors behaviours conducted by experts like Robin Moore and Roger Hart has also been included. Functional, construction, symbolic, exploratory, autonomous, onlooker, and collaborative are some of the classifications.

3.1.1 Functional

Actions that involve repetitious movements of the muscles are categorized as functional play. Playing this way is very bodily and focuses a lot on gross-motor abilities, which help to improve hand-eye and foot-to-eye coordination as well as improve sense of place and awareness of our bodies. Outdoor actions, the climb, leaping running, slipping, threw, being hung swaying, and gliding are examples of functional play actions (Hines, 2011).

Two subcategories have been identified for physical play, the first is rhythmic, which mostly manifests in the initial years of life and peaks about six months of age. It involves swift repetitive movements of the arms, legs and head. Exercise play is the second kind of physical play, and it increases between the ages of 4 and 5 (Pellegrini, 2011).

3.1.2 Construction

The main activity in construction play is arranging loose parts for building an area or an item. In addition to innovative and conceptual imagination, designing, logic, negotiation, hypothesizing, and resolving issues, this kind of play can involve sensation play. One can engage in building outdoors by constructing structures such as roadways, castles scaffolding, barriers, houses, palaces, or other innovative places or animals (Rubin, Maioni, & Hornung, 1976; Rubin, Watson, & Jambor, 1978). A research has indicated that children who play

through construction regularly tend to solve construction-related issues more frequently (Gredlein & Bjorklund, 2005; Pellegrini & Gustafson, 2005).

3.1.3 Symbolic & Collaborative

Innovative play, or symbolic play, frequently incorporates role-playing and/or dramatic, mystical activities. children can develop their ability to solve problems as well as gain greater psychological liberty and self-awareness through this kind of play. Symbolic play can help with attention recuperation and foster cooperative thinking, creativity, and stimulation of the senses. Playing home and performing out creatures or heroic characters are two examples of symbolic outdoor play actions (Piaget, 1962).

Kids may be pretending they're eating the snack despite thinking about naps as a next phase in their daily schedule when they engage in socially dramatic play. decontextualizing is the procedure of removing things and behaviours that occur in typical real-world contexts (Favel, 1977, 57). For instance, they might act like that a piece of wood is a teaspoon as they're acting like that they're eating. Kids can only interchange items when they are extremely similar, such as an inflatable play teaspoon for an actual spoon (Leslie ,1987).

3.1.4 Discovery / Exploratory

Plays of discovering are preliminary and investigatory. It is frequently motivated by supplication, conjecture, and an overall feeling of amazement. Playing with discovering can help foster self-awareness, testing, logic, creativity, negotiation, and sentimental independence. Performing this play outdoors can involve multiple tasks such as carrying rocks, scaling trees, excavating, disassembling leaves or stems, gathering blossoms, tracing ant tracks, and studying insects (Bornstein,2006). When encountered with novelties, investigation arises, but play appears after acquaintance. Children therefore investigate objects when they initially come across them and then play with them once they are comfortable with them (M. Hughes & Hutt, 1979).

3.1.5 Solitary and Independent

Play which is child-directed and self-regulated and frequently takes place apart from other children or adulthood is referred to as solitary or independent play. Kids can engage with tasks throughout this kind of play despite thinking about others near them. A child may grow their own unique thoughts and opinions through independent play, which frequently calls for solving issues, creativity, and concentrated attention. Independent playing is a common way for kids to decompress and relieve stress. Outside, sand play, observing animals, lying down, and scaling are a few examples of independent playtime (Vygotsky, 1978).

3.1.6 On-Looker /Self-Focused

When a child plays onlooker, they are watching other people. This kind of play can happen when a kid is playing alongside other kids, and it can lead to the child changing their own actions because of what they have witnessed. A child observes and picks up knowledge from those near them while engaging in this kind of play. They frequently exhibit developed fine and gross motor abilities and logical thinking, which may encourage them to experiment and take risks. A few examples of outdoor onlooker playthings are climbing to new heights, imitating creatures, role-playing, and investigating feasible stick-building projects (Parten, 1932).

3.2 BENEFITS OF PLAYFUL ACTIVITIES FOR CHILDREN

According to Elkind (2007) and Hirsh-Pasek, Golinkoff, Berk, & Singer (2009), play is thought to benefit kids in so numerous ways that it is referred to as “a child’s work” (Paley, 2005) and even essential for their best possible growth (Ginsburg, 2007). The next part examines the proof supporting this assertion in relation to non-social cognitive outcomes, such as intelligence, and concludes with discussion of play therapies and emotions control.

3.2.1 Physical

Matvienko and Ahrabi-Fard looked at the impact of a 4-week after-school program on motor abilities and fitness in early childhood and first-graders to highlight the significance of motor skill acquiring in young kids. After the intervention, the intervention group performed considerably higher across all motor abilities examines than the control group, which only

took part in the inspections. kids in the intervention group performed much better on a variety of motor skill examinations, such as leap rope, pull-ups, shuttle runs, and tossing, four months after the intervention. Crucially, the outcomes demonstrated that at the 4-month follow-up, leaping and tossing ropes abilities were important indicators of heart health (Barnett and colleagues,2008). Supporting these conclusions, Barnett and colleagues demonstrated that 244 kids with strong control of objects abilities (such as kicks, catch, and throwing) had a higher chance of developing into fit teenagers. Additional research supports these conclusions as well. One key finding from these investigations is that, in contrast to fitness, which is a state, motor abilities have a higher probability to be stable and long-lasting once they are learned (Stodden and colleagues,2007).

3.2.2 Cognitive

It has been suggested that pretend play influences a number of non-social cognitive outcomes, including logic, creativity, and conservation. We start by thinking about creativity. It is reasonable to assume that pretend play will foster kid's creativity (P. Bateson & Martin, 2013), as kids frequently imagine items and situations differently when they play pretending. Lillard et al. (2013) looked at seven research investigations that linked the amount of pretend play among pre-schoolers and their ability to innovate. In these investigations, kids' pretending was usually set for one to five minutes a day, for at least twenty days on playgrounds, most frequently, the Torrance creativity in movement and Activity test which is determine how well a kid's brain operates and are often provided to kids to identify progressed placement or as an element of an entrance inspection. the alternate task was used to put into practice innovation. In the "Alternate Utilizes" task, individuals are asked to come up with as many different uses as they can for an image of a common item, such as a napkin. As a total amount of individual responses (uses not provided by anybody else in the sample) are accomplished. In addition to asking kids to do tasks like "move such as trees in the breeze," the Torrance test also measures how creatively kids can complete these tasks. In addition to asking children to do tasks like "get moving as trees in the breeze," the Torrance's examine also measures how inventively kids can complete these tasks. Through the presentation of premises in a pretending compared to a real context, multiple investigations have investigated if pretend play could impact reasoning. Whenever false premises are offered in a pretending setting, preschoolers are much better at thinking from

them. For instance, hearing, "Every cat barks," Rex is a cat. Is Rex a barker? Younger kids are likely to mistakenly respond "no" but if they are first told to pretend that cats bark on a different planet, they are much more likely to follow the syllogism and answer it rationally. It has been deduced from this that pretending provides a context that facilitates logic. (Lillard, 2013). also, a number of investigations have examined the relation between pretend play and language (Werner & Kaplan, 1963). Pretending play and language do, in fact, appear to be connected, according to numerous studies (McCune, 1995). Pretend play is said to "make a contribution significantly to language advancement" as a result (E. Miller & Almon, 2009, p. 209).

3.2.3 Social and Emotional

Pretend play has also been proposed to affect children's cognitive representations, which may in turn affect their ability to regulate their emotions and mental wellness (Russ & Fehr, 2013). One context for such pretending is play treatment, which alternatives for verbal therapy with young kids since their capacity to communicate and self-awareness are inadequate for talking (Klein, 1930). In theory, children may express their fears and work them through to resolution with the help of toys, a sympathetic therapist, and liberty of expressing themselves (Axline, 1989; Guernsey, 2001). Bretherton (1989) provided evidence supported this idea by arguing that play was necessary for mastering one's emotions, which could not be satisfactorily achieved through other activities.

In reference to the first theory, it is not certain if, when, and how much children express their internal selves via play. On certain situations, it appears highly probable (Haight, Black, Ostler, & Sheridan, 2006; Paley, 2005; Volterra, 1984). Kids, for instance, express stories about attachment activities by acting them out with dolls in manners that reflect their own attachment style (Bretherton, Prentiss, & Ridgeway, 1990).

The stress levels kids experience due to expectations about their performance in school, their homes, in extracurricular actions, and in their lives are on the rise, which highlights the importance of outdoors play. Unstructured outdoors play has been connected to a decrease in anxiety. Stress has been related to sentimental and behavioural distress, such as anxiety, sadness, and violence, as well as physical problems like elevated blood pressure and sleep problems (Biddle, Sallis, and Cavill, 1998; Follholm, Nuutinen, Pasanen, Myohanen, and Saatla, 1999).

Andrea Taylor and Frances Kuo, the researchers of the Landscape and Human Health Laboratory conducted further ground-breaking studies measuring the effects of nature on attention-deficit/hyperactivity disorder children. Kuo, Sullivan, and Taylor (2001) conducted a study that demonstrated a noteworthy reduction in symptoms for these children who were spending time outdoors. This suggests that nature could potentially function as a substitute therapy for them. "His son, even though usually having difficulties toward his concentration deficit symptoms, is able to hit balls of playing golf with me for two hours simultaneously. and he fishes for several hours at a time on his own," one parent who took part in the research's focus group noted. According to this dad, his son is much more at ease and his concentration deficits symptoms have decreased as a result of these actions (Lillard ,2013).

3.2.4 Parental Bond

The possibilities for "sustained shared thinking" cooperative participation in child- and adult-initiated actions, and notified communications in kids independent and free-play actions are examples of successful instructional indications. According to Wood (2009), "the practitioner's function is understood as being active in developing play/learning circumstances, in addition to adaptable to child's choices, passions and learning patterns."

In certain instances, adults act as partners, facilitators, and initiators of play, encouraging children to play alone, with friends, or with them. Creating play interactions that promote connection between kids and their parents is a common practice. Think about these various adult participation levels and the most effective ways that caregivers can facilitate play (Excell & Linington, 2011).

Free play allows the parents to fully participate with their child and gain insights into their child since it fosters unrestricted connection between the child and the outside world. Child-driven play allows parents to "see the external environment from their child's viewpoint as the child negotiates a world that perfectly established just to fit his or her needs" corresponding to a report presented by the American Association of the Paediatrics (Ginsburg, 2007) Experts in medicine concur that this kind of play can enhance parent-child communication because it gives kids a chance to communicate their thoughts, feelings, and experiences in a less verbally and maybe more relaxed way. Reduced stress during

unstructured outdoor play can create opportunities for guidance, collaborating, and strengthening the bond between a child and their parent (Cara Popping,2023).

3.2.5 Sense of Place

Sense of place, is defined as "the sensation of being connected that occurs between individuals and the surroundings wherever they live" by Robin Moore, an instructor of landscaping design at North Carolina State University. They believe they are associated there and that it is where they belong. Particular and portable components within natural playing spaces can reduce the risk of similarity because no two typical play environments are particularly the same (Robin C.; Moore & Wong, 1997). In children's thoughts and feelings, "playing areas are interchangeable because they are similar." Through inquisitive exploration with their bodies and sensations, children are highly energized to establish a connection with their environment. Kids can explore freely in the outdoors, letting go of rules, leaving their mark, and making the area uniquely their own. Green play areas are endless, accommodating, and adaptable. Together with fostering a greater sense of self, a powerful sense of place can also encourage society participation and the environment responsibility (Frost, Brown, Sutterby, & Thorton, 2004).

In addition to soil, sand, and water, plants also offer controllable environments. You can construct a rock dam over a stream or a trench in sandy soil and dirt, but otherwise, you can only climb, hang, and fall off a jungle playground. Unstructured play facilitated by natural elements emphasizes unorganized inventiveness using a variety of components. Playing in natural environments encourages longer and more complicated games because of its high levels of complexities and variation. Plants encourage creativity, dramatic pretend play, and discovering due to their dynamic qualities. children are naturally attuned to surroundings with vegetation because vegetation appeal to all of the senses. vegetation in a comfortable setting that combines shading, sunlight, hue, texture, softness, scent and the structure's softness promote tranquillity, Flexibility, variety, manipulation, discovery, confidentiality, which are attributes found in the natural world (Frost et al. 2004).

4. DESIGN CRITERIA

Playgrounds ought to be designed to optimize interaction among groups of various sizes. On the other hand, the optimal playground has activities for all ages and sizes of categories. This includes places for adults to interact, places for children to play in small and large groups, and places for solitary play (so the fact that societal interacting is feasible whenever it happens) (Hudson and Thompson 2001). These areas do not frequently require physical play items. We may create some special areas in play areas, that serve a role as play equipments. When kids play individually or with others, they frequently use their creativity to create new activities. Yet, set play equipments restrict children in particular activities (Veitch et al. 2005).

Child, who has no ability to express themselves, is the most significant member of the global population, and children behave different ways at every age stage. Additionally, each child's growth style, what they experience, their eating habits, circumstances, and a few other biological, social, and psychological variables all influence the various behavioral types that arise. However, the design process does not take these differences into consideration, Designs are limited as “standard child” and identical play equipment's are set up every location like typical project. So, these places lost their significance in time and become unqualified areas. Adopting the place and wishing to be there, are the evidence of design's quality (Gür and Zorlu, 2002). within this viewpoint. The factors for quality playground layout have been indicated in this thesis and the principles of designing quality playgrounds have been demonstrated. design criteria are the explicit goals that a project must achieve to be successful and are used to evaluate the acceptability of a project's design. to confirm whether the design fulfills its fundamental goal of producing the ideal design for children, several guidelines were studied, including Robin Moore, Bhattacharya, S., Şensoy & İnceoğlu, Herringtons and Anderson guidelines. Şensoy & İnceoğlu guidelines will be chosen since it includes most of the aforementioned guidelines. Likewise, the Herringtons criteria was mentioned separately since it is fundamentally different from the previous guidelines.

4.1 PLAYGROUND DESIGN PARAMETERS

The locations where children can spend time these days are few, or of low quality, and have restricted availability. As a result, kids lost touch with nature, their lives became unqualified, and kids' freedom to act was restricted by intense urbanization, which also had negative effects on kids' social growth (Özdemir A., 2010). Keeping this in consideration, Şensoy & İnceoğlu identified several factors that must be considered when creating a high-quality playground. It is anticipated that managers and designers will make use of it as a reference when designing the playgrounds in accordance with the recommendations made in this study. Playgrounds would therefore again become favored locations, offering both entertainment and educational opportunities. children would have the chance to improve themselves, and play areas would become crucial places for childhood, which is an essential time in human history (Şensoy and İnceoğlu, 2015).

When designing a high-quality playground, the following factors need to be considered:

4.1.1 Collaboration

Every aspect of the design must be considered, and designers must work with experts who are familiar with this particular case. "Kids are the most affected, but they have no control over where or what kind of play equipment is available to them. A child's preferences are typically decided by taking into account what the other individual thinks would appeal and satisfy the child (Sanoff, H. 1995). observing kids while they play is an excellent method to discover their interests (Moore, C., and Cosco, G. 2005).

4.1.2 Location

The region must be investigated before a place is selected, and in particular, the instance where youngsters prefer to be should be examined.

Pollution in the air, disruption, automobile density, and central location should all be taken into account when this analysis is being conducted (International Save the Children Alliance, 2008).

4.1.3 Security

The goals of child development do not have to conflict with the idea of a healthy and safe environment. people and traffic flow must be kept apart by erecting a wall or fence around

the playground. Furthermore, "fence design must preserve natural regions without sacrificing visual appeal, Youngsters under the age of twelve are highly curious and energetic. For this reason, high up and close to playgrounds are the best places to put seating



Figure 4.1: Fences To Direct Traffic Flow (utahfencing.com).

equipment. Safety precautions for the playground could potentially have a single entry that is concealed by an administrative office (Moore, C., Goltsman, S., and Iacofano, S. D.,1997).

4.1.4 Social Interaction

Play and learning require social connection as a prerequisite. Kids can expand and improve their social ties with adults in their immediate environment as well as with each other in properly-designed seating and collecting areas (Moore, R. C. 1996).



Figure 4.2: One Of The Examples Of Social Relationships On Playgrounds (mrcrec.com).

The playground serves as a venue for interactions, interpersonal ability development, practice rejection, embracing experiences, friendship development, and collaboration education (Hudson & Thompson, 2001).

4.1.5 Acceptable Risk

Youngsters utilize play to push themselves and learn how to handle difficult circumstances. Due to this, playground design has to allow for acceptable risks that contribute to children's physical and personal growth. Additionally, the playground needs to be far from any



Figure 4.3: Example Of Acceptable Risk At Playgrounds (mumslittleexplorers.com).

activities that could negatively impact kids in a major way (Ball, D., Gill, T., and Spiegel, B. 2012).

4.1.6 The Diversity of Equipment

Increasing playground diversity and equipment quantity is a strategy to help kids explore their own abilities and discover new thrills. Playgrounds with inadequate equipment pose a risk to children as they search for unusual experiences and engage in challenging activities.



Figure 4.4: Example Of The Diversity Of Equipment At Playgrounds (fastcompany.com).

"The inclusion of variously textured play structures in a well-designed playground enhances play and promotes learning through exploration "Additionally, children of all capabilities can play with a variety of equipment (usuluoglu, D. 2013).

4.1.7 Care and Repair

Play areas require regular maintenance to remain in beneficial condition over time. The construction of the completely new playing area ought to consider maintenance possibilities and costs into consideration from the beginning of the construction. This covers everything, including choosing, looking for hazards, and modifying out the features (Turgut, H., and Yilmaz, S. 2010).

4.1.8 Health and Hygiene

Environment substances are a particular issue around kids and individuals with environmental issues diseases. Due to the variability of individual responses, diagnosis and therapy are challenging. For the same exposure, the symptoms might frequently vary from behavioural reactions to allergy-like symptoms to flu-like symptoms. Playgrounds need to be kept clean by eliminating these kinds of contaminants (Moore, C., Goltsman, S., and Iacofano, S. D. 1997).

4.1.9 Flexibility

A piece of equipment that serves multiple purposes not only saves resources for future designs but also breaks up environmental homogeneity by allowing for a variety of applications.



Figure 4.5: Example Of The Flexibility Of Equipment At Playgrounds (kompan.com).

Natural landforms and man-made elevation changes also give attract to a location and encourage different play activities, like crawling, rolling, sliding, balancing, and jumping, which all activate the vestibular sense (Moore, R. C. 1996).

4.1.10 Natural Environment

With basic, observable, portable, and organic tools, kids can play, have fun, and develop their creativity in a natural setting "This outdoor activity offers an occasion of being up in



Figure 4.6: Example Of The Natural Playgrounds (earthwrights.co.uk).

close contact with nature, learning different things despite the gloomy conditions of urbanization." As a result, children acquire knowledge by engaging in, develop into "participants" rather than "visitors," lead fulfilling lives, and play regions become part from the educational process (Özdemir, A. 2010).

4.1.11 Climatization

Play area designs must take local climate variables into consideration. The most suitable local climates for play area locations are typically found near water, on south or southeast slopes, and on higher or partial slopes as opposed to at the base or cresting of the slope.

Playing places and activities ought to be positioned to either prevent or benefit from the obscuring impact caused by structures and evergreen plant areas, according to the local climate. On intensely sunny days, water is utilized for cooling the air and provide a sense of softness (Moore, C., Goltsman, S., and Iacofano, S. D. 1997).



Figure 4.7: Utilizing Water At Playgrounds (amazingarchitecture.com).

4.1.12 In formativeness

An additional feature that playgrounds ought to have is in formativeness. For instance, youngsters are encouraged to be creative when they find blocks between trees. Children pay attention to physical factors such as form, size, weight, shape, and fit when they investigate their thoughts structurally. Children learn about balance and enclosures, two spatial and structural issues, while constructing structural issues, while constructing structures out of



Figure 4.8: Example Of Constructions At Playgrounds (learninglandscapesdesign.com).

blocks. they can accomplish a variety of learning objectives through block play, they can learn how to collaborate and work alongside their peers (Sanoff, H. 1995).

4.1.13 Universal Design

According to universal design standards, adequate equipment must be provided for both disabled and non-disabled individuals, but in specific features, such as size and weight. The primary design principle must be that "Children with different abilities ought to have the ability to play together in well-designed play areas."

Therefore, playgrounds need to have equipment for kids with disabilities as well. In order to avoid overlapping with activity locations that are easily disturbed by movements and noise, the entrance to activity areas and the path of movement have to be planned broader and even (Moore, C., Goltsman, S., and Iacofano, S. D. 1997).

4.2 HERRINGTONS SEVEN CRITERIA FOR DESIGNING PLAY SPACES

The Seven Cs criteria were developed after a review of the literature and investigation of the affordances of outdoor play for young children in Vancouver, Canada. Field observations, focus groups, centre-wide workshops with early childhood educators (ECEs), and

videotaping of kids using the play areas were all used in the research (Herrington S, Lesmeister C, Nicholls J, Stefiuk K ,2007). The study discovered that quality outdoor play involves more than simply having items to play with, the 7Cs criteria—character, context, connectivity, change, chance, clarity, and challenge—are derived from the findings. These results ought to be applied in conjunction with the current guidelines, codes, and safety regulations (mentioned in the first part of this chapters). The Seven Cs consist of:

4.2.1 Character

Describes the general feeling of outdoor playgrounds and includes elements such as soft material, colour variations, and the quality of the light. The development of children also depends on character. Young children are developing their memory, obtaining up classification skills, recognizing scale principles, and utilizing language, even humor to express. the physical surroundings may specifically assist these growth achievements (Herrington and Brussoni 2015).

4.2.2 Context

Focuses on the relationship between the play area and its surrounds. whether the play area below grade, at grade, or on a rooftop, the weather conditions have been taken into consideration, and are there any tangible or visual ties to the local environment, for instance, roof play areas with views of the city below can offer chances to learn about the inner workings of a metropolis. Has the play area in an at-grade or below-grade setting been shielded from the surrounding area, if the centre is located in a risky neighbourhood or not (Herrington et al. 2007).

4.2.3 Connectivity

Shows how the play area is connected both visually and physically. Both cognitive and physical growth are correlated with connectivity. A hierarchy of routes, for instance, can be used to map out where youngsters move throughout a play area and assist in their understanding of its location and timing. Interconnectivity can also be seen in the connection between interior and outdoor spaces. children ought to be able to detect what is going on outdoors, including natural changes like the seasons and cultural changes like the routine

activities of their neighbours, according to Reggio Domes Academy Research Centre (Tomasello et al. 2005; Tomasello and Haberl 2003).

4.2.4 Change

Refers to the variety of sized areas that are designed in the play area and the ways in which these areas alter throughout time. Growth of the mind and emotions is connected to change. Most youngsters can discriminate between orders of magnitude, like scale, when they are three years old. The outdoor play space ought to have a variety of areas that can hold different numbers of kids. By the age of three, a lot of kids start paying close attention to what they see every day; its temporal patterns and sequences, Seasonal changes and general growth patterns can be sensed by living things, including plants and animals. In addition to adjusting the sun and wind in the outdoor play area, plants also generate flowers, seeds, and leaves that children can use as playthings (Charles 2012).

4.2.5 Chance

Children may construct, manipulate, and make their mark on their outdoor play zone with the help of this criterion. This is very essential for young children who are developing fine-motor abilities, have increased mobility, and have the ability of creating games and other worlds (Nicholson, S. ,1971). The "messy zones" that Greenman describes are one type of chances. These are the regions of the playground where children can alter their surroundings with sand, dirt, water, and loose pieces. Chance also allows for spontaneous discovery, which encourages youngsters to learn and discover thereby establishing a connection between their physical and cognitive development (Greenman, J.,1992).

4.2.6 Clarity

Combines perceptual and physical legibility. Since most kids eye tracking and binocular vision are still developing by age five, play areas should be sufficiently mysterious to encourage unstructured exploration without being overly confusing to discourage kids from exploring the area (J. Greenman ,1992). Children found it challenging to sustain play that involve actions like tag or imitation play in areas where whole play equipment occupies the geographic center of the play area (a typical position for these elements). This was since the play structure separated the play area into unconnected external areas. Children's educators

observed that this arrangement made it difficult for them to see the whole playing area (Herrington and Brussoni 2015).

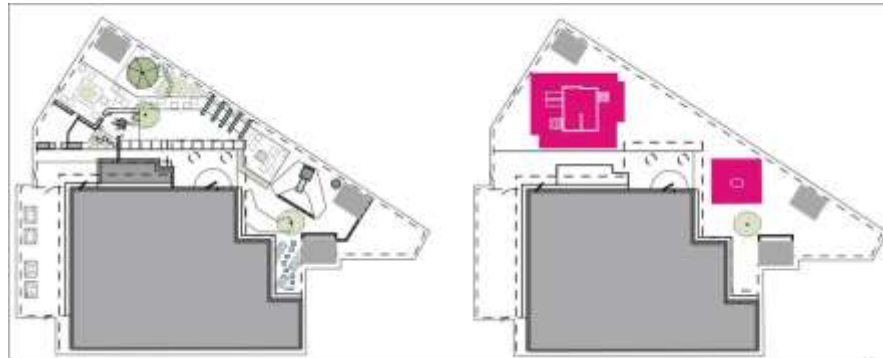


Figure 4.9: The Plan On The Right May Look Clearer To The Design Team In Top View. However, The Plan On The Left Is A Clearer Design Scheme Because It's Related To The Scale And Movement Of Children (Herrington).

4.2.7 Challenge

Refers to the mental and physical challenges that a play area offers. Play areas should encourage kids to take chances without becoming dangerous. When designing play environments, it is important to understand the distinction between hazard and challenge. Hazards are possible causes of danger where kids may not always be aware of the possibility of injury. children are able to identify and assess challenges, which gives them the power to determine whether and how to participate in the activity (R.C. Moore et al. ,1992). children will use play areas and equipment to optimize their affordances, disregarding of design objectives, pushing both themselves and the environment to the maximum. In particular, challenging play areas should feature equipment at different heights, climbing areas, a large, level area for running and playing ball, grassy incline areas for rolling down, logs or stepping stones, and slides that are at a challenging height (J.E. Johnson, J.F. Christie and T.D. Yawkey ,1987).

5. PLAY SPACES FOR CASE STUDY

A small but significant period of a child's day is spent at the playground. When they're on playgrounds, they comprehend, play, dream, collaborate, build, visualize, communicate invent, and acquire up both positive and negative social abilities. despite the fact that playgrounds have potential to be very important, many of them are rough, uninspiring, and bare areas that stand in contrast to carefully planned interiors.

The biggest sections of these conventional playgrounds are made of grass or pavements.

Unsurprisingly, a large number of children (such as most girls and boys who aren't interested in these active games) are left out of the action on traditional playgrounds because they aren't able to or unwilling to engage in these types of activities on the large patch of grass and pavement (Dyment, Bell, and Lucas 2009).

In response, several investigators were conducting out studies in which they altered playground features in an effort to improve children's playtime experiences. Researches indicate that certain interventions, like adding green spaces and natural environments (Bell and Dyment 2006), containing games equipment (Cardon et al. 2009), producing loose play components (Maxwell, Mitchell, and Evans 2008), illustrating playgrounds marks (Stratton 2000; Stratton and Mullan 2005), and implementing administered physical activities courses (Hannon and Brown 2008), can all assist increase the number of children playing.

Cultural variables influencing the paly at playgrounds have been studied by other scholars. For instance, it has been determined that variables that could be developed to improve kids' playground interactions include supervision (Evans 1995, 2001; Evans and Pellegrini 1997; Thomson 2005, 2007) and cultural norms (Evans and Pellegrini 1997; Renold 1997; Stine 1997).

5.1 ANALYSIS METHODS O F PLAY SPACES

Theories similar to Piaget's that emphasize the quantifiable effects of physical spaces elements on young children's mental growth are covered thoroughly in Chapter 3. In light of this, this part of thesis explains the analyses methods of the play areas and equipment designs that are currently in Istanbul in order to meet the growth requirements and demands of young children.

To obtain a dependable and accurate examination of physical activity environments, four playgrounds from four distinct districts are chosen. The framework of qualitative analysis is prepared using information from the existing literature review and prior observations.

An essential element of the scientific investigation of children is naturalist observation and evaluations, which are mentioned throughout the thesis's methodology. Without evolving the regular course of activities, it enables the investigator to study child interactions in outdoors (Vasta, 1979).

Written explanations of children's play patterns throughout the day were combined with observations to collect data for this research. Whenever a target area was scanned, the predominant play types of activity that the majority of the kids were participating in was observed.

Four play areas were selected in Istanbul, identifying whether a space offers children adequate possibilities for their social, physical, mental, and psychological growth is the primary objective of the research.

Recordings of activities, behaviours, and items in the study settings are necessary for qualitative research utilizing methods of observation. Field notes are the common term for this collecting (Marshall & Rossman, 2011). Without relying on the observer's subjective interpretation, qualitative data about the physical location, individuals, behaviours, issues, relations, and specifics of the encompassing environments were recorded in this research.

Every target area at each playground was examined. In terms of the number of children observed, 29 were observed at Deprem playground, 17 at Bulent playground, 65 at Zorlu playground and 41 at Botanic playground for a total of 152 children observed playing.

The information gathered from each playground offers an understanding of the ways in which the design of the outdoors play areas affected the well-being of children.

Through an analysis of the children's interactions and connections to the environment, it will take into account whether a site supplies users gathering places, opportunities for creativity, exploring, and discovering, opportunities for fine and gross motor movements, tendencies toward the outdoors will all be considered in the particular data collecting.

Four playgrounds are observed using photography, videography, and taking notes in order to attain the diversity in the data. Tables present the outcomes.

The playing activities of small children in the outdoors and their interactions with the play equipment that is currently in place are the main queries during the observations period. The

14-day observations period is divided into three days for the Zorlu Playground, four days for Deprem, three days for Botanik, and four days for Bulent, each with a different observations schedule. Children were playing in the field throughout these times through the day, which are typically before school exit hours on workdays as well as between 16:00 and 19:00 on the holidays. During each scan of a target area, the dominant type of play activity in which the most children were engaged was recorded. The categories of play types were (Fjortoft 2004; Fjortoft and Sageie 2000):

- a. Functional : (physical play activities – e.g. running, riding bikes, tumbling, climbing rocks, sliding slopes, climbing trees, playful skiing).
- b. Constructive: (building play activities – e.g. building sand castles, creating hut and shelters, playing with loose parts like sticks, cones, pebbles).
- c. Symbolic & Collaborative: (creative/imaginative play – e.g. role play, dramatic play, social play like house and pirates).
- d. Self-focused/looking on: (no interaction with others, not engaged in play – e.g. day dreaming, empty staring, mimicking animals, watching activities).
- e. Solitary: not engaged in active play but talking with another child, playing in sand.
- f. Discovery: (Climbing trees, examining bugs, digging).

The information gathered from each playground sheds light on the ways in which the architecture of the outdoors play areas affected kids' health. The findings are arranged and shown in the sections that follows.

The study will not specify the exact scope of the child categories because the playgrounds are for different age groups, so it will be discussed apart from age cases, but it will be mentioned if there is equipments suitable for the 0-3 years' old or not.

A set of criteria was applied in this study to quantify the elements of physical environment and assess the outcomes. observations are carried out methodically. The information obtained from the literature review is utilized to prepare the observing sheet.

Parten's (1932) social participation categories and Piaget's (1962) categorization of play types are significant resources of information. In addition to assessing play areas and equipment from a scientific perspective.

5.2 OUTDOOR PLAY SPACES IN ISTANBUL

It is important to understand what kind of outdoor environment contributes to the needs and expectations of young children. For the observations, different playground types including traditional, natural, contemporary are selected. different residential areas of Istanbul including Topkapı, Bakirkoy, Avcilar and Zincirlikuyu are selected.

5.2.1 Deprem Park – Topkapı Playground

Constructed in a historical region and park ,600 square meters is the size. this historical area maintained greenery for many years and believed to be the spot where the Khan first reached the city via the opening in the walls during the occupation of Istanbul. The area gained popularity in the 1980s as a sort of marketplace where retailers, Thrace, and European bus stations were gathered. Research on the area began in the beginning of the 1990s (Goodwin, Godfrey,2000).



Figure 5.1: Deprem Playground Top View (earth.google.com).

During the initially check-ups, an inventory was carried out for the play space. Every component that contributed to the design was recorded. Since every play area is situated within an already-existing public park, a list of park services was included as well. Furthermore, an overview of the surroundings and the pathways and/or streets that lead to the playground has been included as a way to identify accessibility and security concerns.

- a. Play Equipment: all play equipment are plastic and wood with some metal parts.
- b. Swings: 2 baby swings, 4 belt swings, 1 rotation swing with 4 seats.
- c. wooden fort-log cabin: climbing wall Single slide, plastic panels, decks, ropes.
- d. Spring animal.

- e. Track ride.
- f. Monkey bar rings.
- g. Manufactured equipment: with ropes for climbing and slide.
- h. Ground Cover: recycled rubber mulch coloured yellow, white, blue, bricks, tiles.
- i. Trees present: no trees within the play space, water oaks just outside fence.
- j. Nature: 0% within the play space, however good views of the surrounding trees.
- k. Topography: at grade.
- l. Paths/Sidewalks: walking paths leading from the parking to the play space and sitting area.
- m. Surrounding landscape: located behind the tramway, in close proximity to sitting area, Panorama 1453 History Museum is inside of the park.
- n. Sun- Shade: there is no shade.
- o. Fenced vs. open: wooden fenced with two entrances.
- p. Playground amenities: 6 benches.
- q. Park amenities: lake with stones, benches surrounding the lake, trash cans, open grassy area, public bathroom within walking distance, parking lot.



Figure 5.2: Deprem Playground Equipments (by author).



Figure 5.3: Deprem Playground Entrances and Accessibility (earth.google.com).

The playground was compact, varied, and inadequate, with a lot of fabricated play structures, swings, and the slides among other functional infrastructure. The track ride (14%) and manufactured area (42%) were the most popular zones with the children that encountered playing there.



Figure 5.4: On The Left, Children Using The Ropes To Climb, On The Right Two Children Playing In The Monkey Bar Rings (by author).

Spring animal equipment was (7%), swings contained (10%), monkey bar rings (7%) of the children. the remaining target areas each contained between 7% and 10% of the children.

Chart 5.1: Each Target Area Percentage of The Pay at Deprem Park (by author)

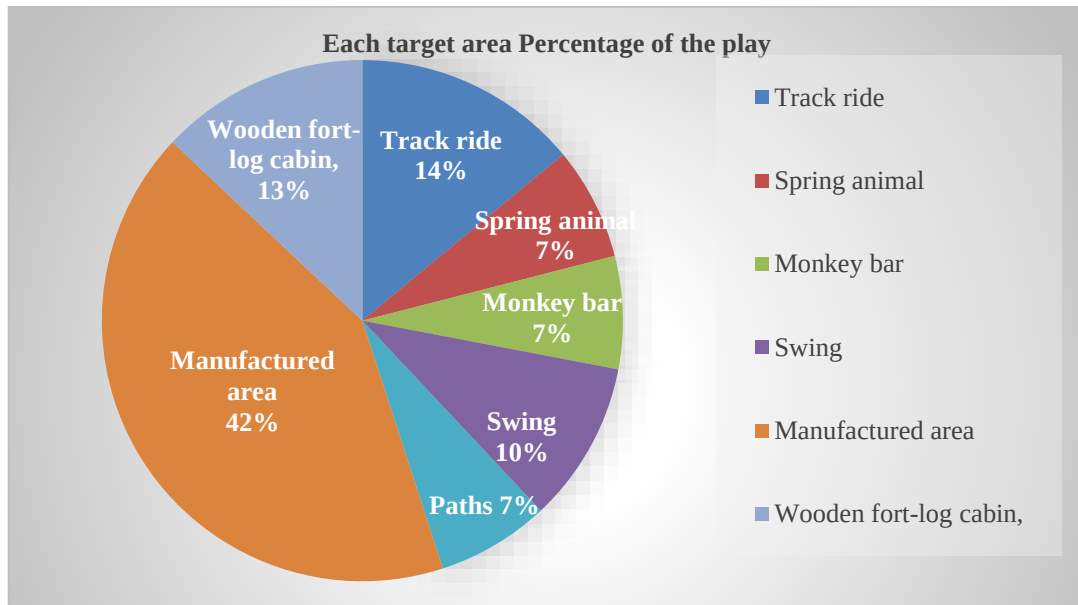
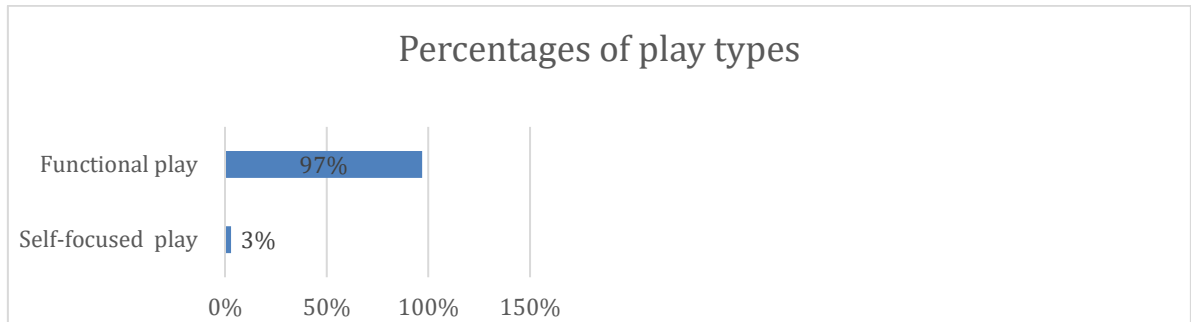


Figure 5.5: Limited Space for Scooter Play (by author).

Children were primarily engaged in two ways throughout all attract areas: Self-focused play (3% of scans), functional play (97% of scans). The equipment designed for track rides, swings, and manufactured functional play encouraged the greatest proportion of functional play (42%, 14%, and 10% of scans, respectively) and the pathway area also increased the proportion of functional play (7%).

Self-focused play was found in the wooden-cabin area (3% of scans in this target area).

Chart 5.2: Percentages of Play Types at Deprem Park (by author).



The grassy areas were found around Deprem playground and were notably less used than the other areas, families and children's parents use this space to sit and watch the children play. Deprem playground contains only manufactured equipment and represented the the greatest proportion of functional play. Children were practicing gross motor skills like climbing, swinging, sliding, and rotating on the manufactured practical equipment. These activities provided children the opportunity to take on acceptable challenges and actual risk. They were observed, for instance, deciding crucially about acceleration and heights. Safety and risk-related worries have also been expressed. These worries are understandable considering that most playground accidents are caused by falls from swings, slides, and climbing structures (Sandseter,2009).

This playground is located in a popular area on the Topkapı Metro bus station way and leads to the Tramway station of Topkapı region.



Figure 5.6: Location of Deprem Playground (google.com).

Deprem play space character types are designed in a Modular character type, a typical kit, fence and carpet playground (traditional type).

There are numerous trees that surround the Deprem area and its close to the tramway station, Plants in Deprem work to purify the atmosphere and visual aesthetics.



Figure 5.7: Trees Surround the Deprem Playground Area and its Close to the Tramway Station (by author).

This play area did not benefit from the shading effect of groups of evergreen trees despite being located in a landscaped park filled with trees due to the distance between it and the equipment. also there is no water source to soften the air, give the feeling of coolness in piping hot days and block the noise in the environment



Figure 5.8: No Consideration for the Degrees of Sun and Shadow at Deprem Playground (by author).

The equipment percentage is 30% and the paths& pavement is 70%.

The equipment is coloured in a variety of bright colours. There is a kind of connection between the equipment itself and each other in Deprem park, where it can be noticed that the majority of the equipment are made of wood and the activities have a kind of similarity.



Figure 5.9: Connection Between Equipment at Deprem Playground (google .com).

For example, the monkey bar rings are connected to climbing ropes. The ropes lead to a walking path and a climbing wall

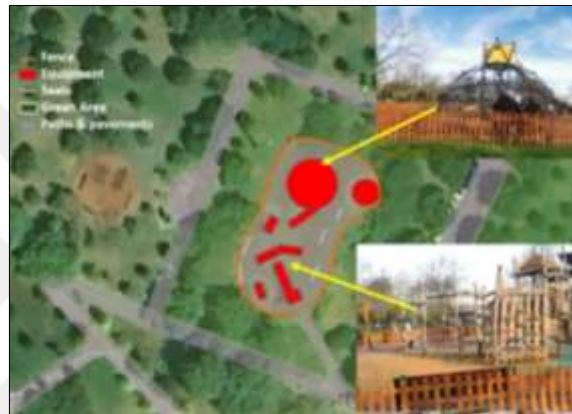


Figure 5.10: Visual Connection in Deprem Playground Design (earth.google.com).

The tram stops next to the square promotes variety in the visual environment, permits the kids observe people walk by, and allows them to develop their spatial consciousness. There is a change in the size of the equipment, but the space is not divided into specific zones, which gives the feeling that the space is one, inseparable. There is no differentiation in the pathways which accommodate different forms of mobility. and the ground is one level but coloured by many circles of colours.



Figure 5.11: Colourful, Single-Level Paths in the Design of Deprem Playground (by author).

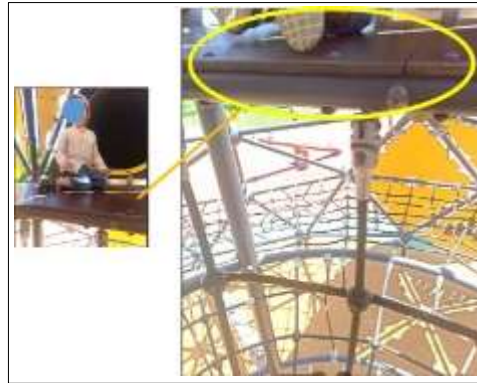


Figure 5.12: A Space that Allows the Observation From the Top of the Equipments in Deprem Playground Design (google .com).

The materials used in the playground equipment are wood, steel, ropes and plastic, so the materials of the spaces actually change themselves overtime.



Figure 5.13: Designing Spaces & Equipment of Different Materials and Sizes in Deprem Playground Design (google .com).

Change involves a range of differently sized spaces designed in the play area and this what Deprem playground lacks, as there is no wide range of spaces, only equipment placed together. There are no specific gathering places or areas for social interaction through which children can expand and enhance their social relationships with each other. The paved area is about 70% of the playground area and is used to move between equipment and to help parents assist children while they play.



Figure 5.14: Paved Area at Deprem Playground Design (by author).

The lack of areas where kids are allowed to be alone due to excessive protection. The flowers, seeds, and leaves produced by this living material can provide open-ended play props for children, but they are not put to use in this garden.

There is no opportunity for the child to create, manipulate, and leave an impression on the play space. The design team did not consider how the play space can allow for chance as, places to dig, watery places and sand areas where loose parts provide tools for children's imagination and their increased ability to mold, shape, shift, press, and drizzle

The design team did not create spaces to encourage spontaneous exploration activities in the play space by creating areas that encourage children to investigate.

In this type of playgrounds, children had a difficult time maintaining play involving movements like tag or imitative play because the play structure divided the play into disconnected peripheral spaces. this type of configuration interrupted their view of the entire play space.

The circulation of people separated by surrounding the playground with fence to provide the security around the playground. Also "fence designs protect natural areas without compromising visual quality.

There is a clear entry and exit spaces are provided to the outdoor plays space to prevent accidents.

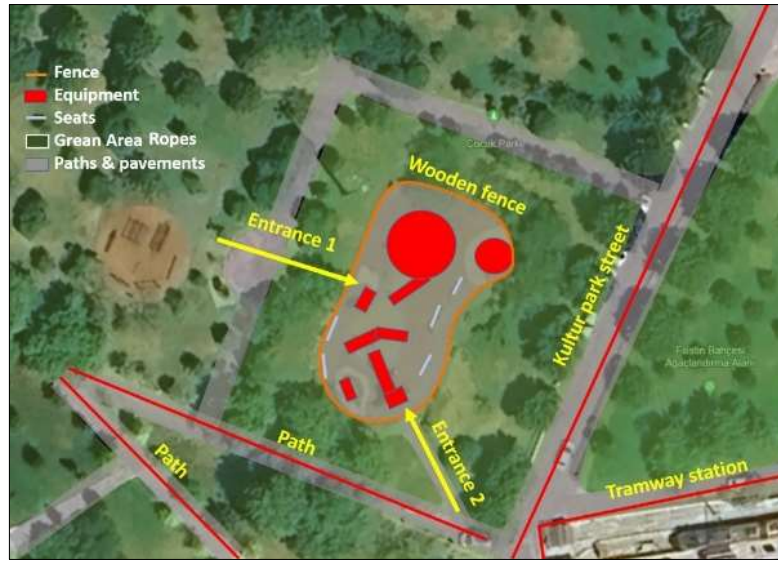


Figure 5.15: The Plan May Look Clearer To The Design Team In Top View But It Is Not Entirely Clear Since It Is Not Related To The Scale And Movement Of Children At Deprem Playground (by author).

During children's activity there is not any barrier that limits parent's point of view. Sitting equipments are placed in the playground but not on high level



Figure 5.16: Location Of Seating Equipment For Parent Observation In The Design Of The Deprem Playground (by author).

This outdoor play space was comprised of primarily hard surfaces and close proximity to a tramway but it is surrounded by plants and vegetation so the noise is absorbed and relatively moderate. The noisier outdoor play spaces created a general atmosphere of confusion, and stress. The study finds there are two levels of difficulty(challenge) for climbing activity, as it shown in Figure 5.18. From climbing a small wooden wall limited in height to manufactured ropes (higher height).



Figure 5.17: Two Levels Of Challenge For Climbing Activity At Deprem Playground (by author).

There are two levels of difficulty for the swaying activity. From swaying by the four ropes equipment to the monkey bar rings which includes the challenge of the time factor to move from one episode to another.



Figure 5.18: Two Levels Of Challenge For Swaying Activity At Deprem Playground (by author).

For swinging, there are two types of difficulty, From single swing to pairs-swing.



Figure 5.19: Two Types Of Swinging Activity At Deprem Playground (by author).

There are two levels of difficulty for the sliding activity, From small slide to giant slide.



Figure 5.20: Two Levels Of Challenge For Sliding Activity At Deprem Playground (by author).

There are two levels of difficulty for the walking activity, From a rope bridge to a large wooden stick.



Figure 5.21: Two Levels Of Challenge For Walking Activity At Deprem Playground (by author).

There are two levels of difficulty for the bouncy activity, from spring animal to spring vehicle.



Figure 5.22: Two Levels Of Difficulty For The Bouncy Activity At Deprem Playground (by author).

It has been noted that gameplay is a challenging due to the type of equipment used.

There is kind of acceptable risk, especially in high-height climbing rope equipment and monkey bar rings that provide an acceptable risk of falling. It can affect children's personal and physical development positively, and there is diversity of equipment design with different textured equipments (swings, slides, Difficult high rope climbing, spring animals and vehicles, climbing walls). different kinds of equipments provide play opportunity for children.

There is good maintenance of play spaces, this includes everything from litter-picking to checking for hazards and replacing the features and the playground kept hygienic by cleaning the place constantly

There is limited flexibility in the design of the equipment, for example using climbing ropes manufactured for climbing, sliding, and observing from the top of the equipment, using wooden manufactured for walking and observing while other equipment does not have the flexibility for different uses, they all have one function

In this playground, there is no equipments suitable for disabled children. equipments are not age appropriate and there is no equipments suitable for 0-2 years' old, spring animal & vehicle suitable for 2-5 years' old.

5.2.2 Bulent Ecevit Park – Avcılar Playground

The area is 500 square meters and the park has the name of Mustafa Bulent Ecevit, a politician from Turkey who held the position of minister on several periods between 1974 and 2002. The primary entry to Istanbul's centre through the west side is located in the Avcılar region, one of the town's historically districts with significant historical value throughout the Ottoman Imperialism. (Kinzer, Stephen, 2006). During the initially check-ups, an inventory was carried out for the play space:



Figure 5.23: Bulent Ecevit Park – Avcilar Top View (earth.google.com).

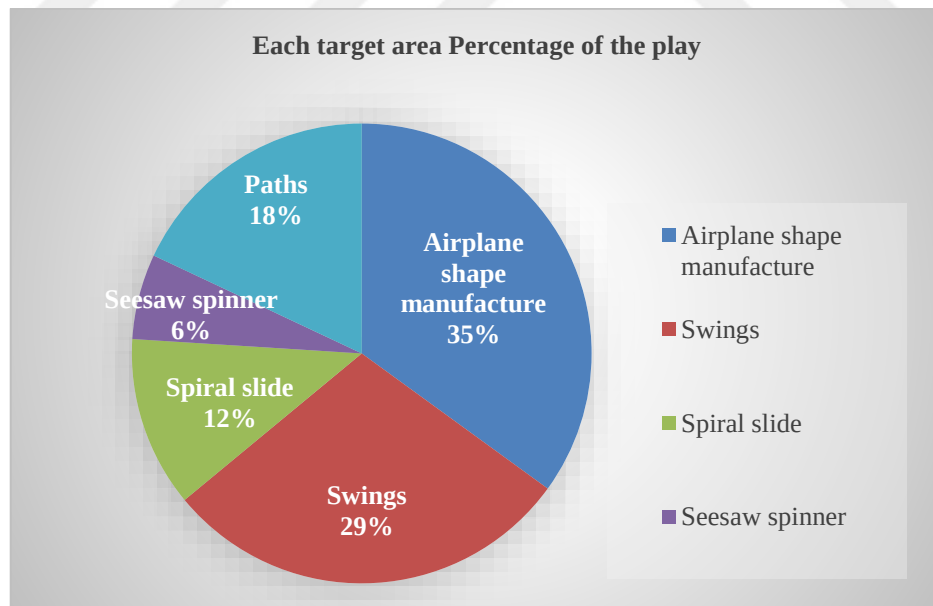
- a. Play equipment: all play equipment is plastic with some metal parts.
- b. Swings: 3 baby swings, 5 belt swings.
- c. Plane shape Manufacture: on wheels, 2 Slides, 2 spiral slides, with 2 ladders (wings shape).
- d. Flat Bed Slides manufacture: 2 slides with ladder (hut blue manufacture shape).
- e. Slide manufacture: 2 slides and 1 spiral slide with 2 ladders (hut red manufacture shape).
- f. Seesaw spinner: 1.
- g. Ground cover: recycled rubber mulch coloured grey.
- h. Trees present: about 15 trees within the play space.
- i. Nature: 0% within the play space, however good views of the surrounding trees.
- j. Topography: At grade.
- k. Paths/Sidewalks: walking paths leading from the parking to the play space and sitting area.
- l. Surrounding landscape: located within a park and near café and sitting area.
- m. Sun- Shade: there is no shade.
- n. Fenced vs. open: fenced from the street side.
- o. Playground amenities: 16 benches.
- p. Park amenities: benches surrounding the playground, trash cans, and open grassy area with picnic benches.



Figure 5.24: Bulent Playground Equipments (by author).

The airplane shape manufacture accounted for the highest percentage of children noticed interacting there (35%), followed by the swings (29%) and the spiral slide (12%) and seesaw spinner (6%) The flat bed slide was the least popular area of slides 0% Perhaps as a result of its location, which is somewhat apart from other equipment and provides a small challenge for the kids.

Chart 5.3: Each Target Area Percentage Of The Play At Bulent Park (by author).



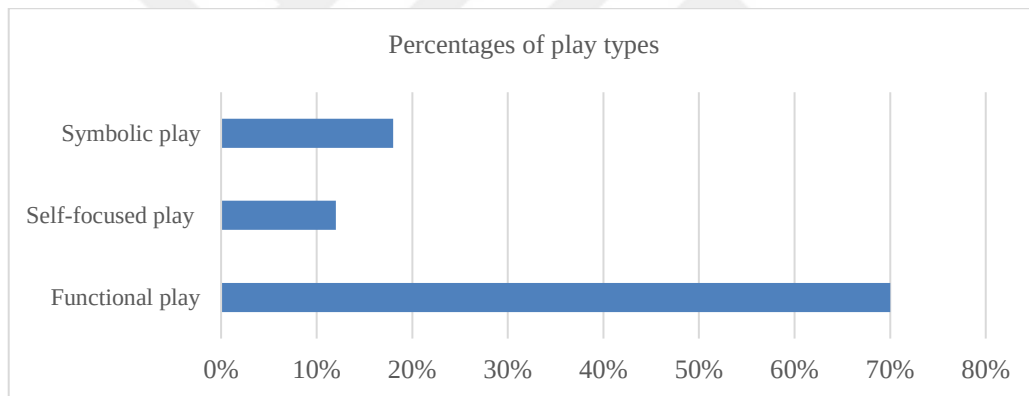
The majority of children (18%) used paved expanse and paths to play together, the fact that there were fewer types of equipment and a larger paved area made Bulent's paved area playground more popular.



Figure 5.25: Symbolic Play At Bulent Playground (by author).

The vast majority of the children (70% of all scans) were found engaging in functional play, self-focused play (12%) and solitary play (18%) in the majority of target areas. According to data, the plane shape manufacturer promoted children's self-focused play (12% of scans). They were playing symbolically in the pathway area, according to the data (18%).

Chart 5.4: Percentages Of Play Types At Bulent Playground (by author).



Bulent playground which contains only manufactured equipment and represented the greatest portion of functional play. children were practicing gross motor skills like climbing, swinging, sliding, and rotating on the manufactured practical equipment.

This playground is located in a popular area and leads to the popular and commercial centre of the Avcılar area and to the Avcılar Central Mosque, next to a main street.



Figure 5.26: Location Of Bulent Playground (earth.google.com).

Bulent play space character types is designed in a Modular character type, a typical kit, fence and carpet playground (traditional type).

The square is enclosed by a culture centre, Avclar mosque, a café and in front of a commercial buildings, Therefore, the temperature rises in the summer, but there are a number of trees that reduce the heat and prevent the wind to blow to a certain extent in the winter.

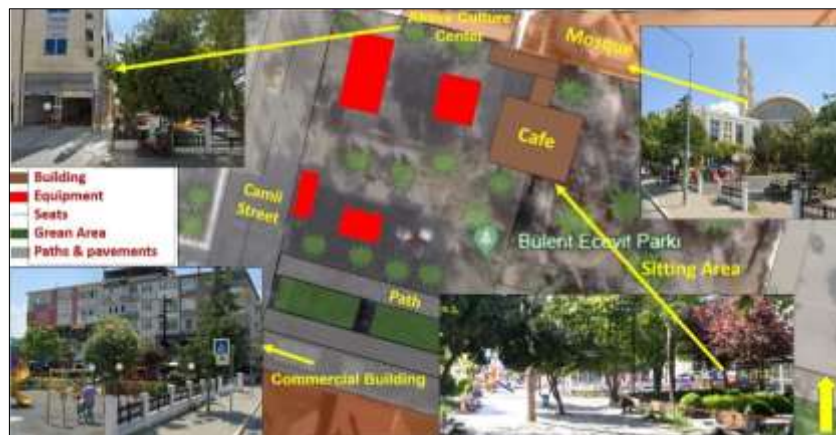


Figure 5.27: Many Buildings Surrounding Bulent Playground (earth.google.com).

This play area didn't take the advantage of the shading effects of buildings and evergreen tree clusters, also there is no water source to soften the air, give the feeling of coolness in piping hot days. and block the noise in the environment



Figure 5.28: No Consideration For The Degrees Of Sun And Shadow At Bulent Playground (google.com).

At this playground there is ability for children to observe the surrounding context.



Figure 5.29: Children Enjoy Observing The Surrounding Context In Bulent Playground (by author).

It is noticed that there is visual connection between the playing equipment and the surrounding environment, the plant also used to enclose activity areas.



Figure 5.30: Visual Connection In Bulent Playground Design (google.com).

The ground is paved with the exception of a small patches of greenery with picnic benches for eating, paved area constituted eighty percent of the ground plane and the paths are straight. only an open courtyard and contain equipment placed together

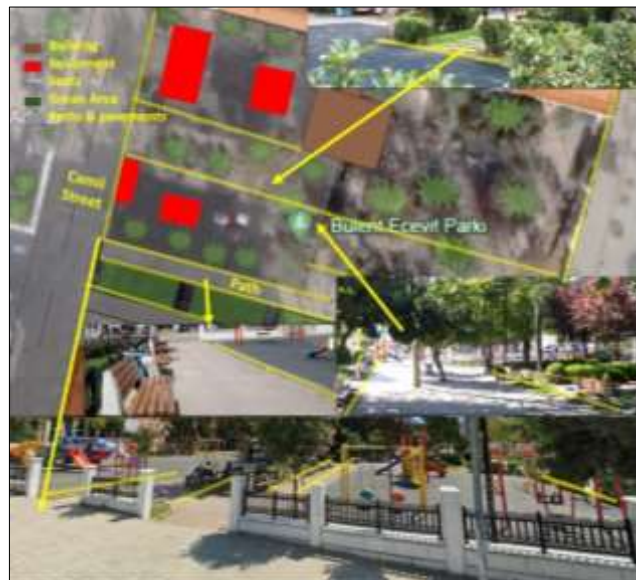


Figure 5.31: Straight Paths Design In Bulent Playground (google.com).

Change involves a range of differently sized spaces designed in the play area and this what the study investigated at Bulent playground, there are two spaces accommodate different

sizes of equipment and that the materials of the spaces actually change themselves overtime. The used materials are steel, fiberglass and plastic.

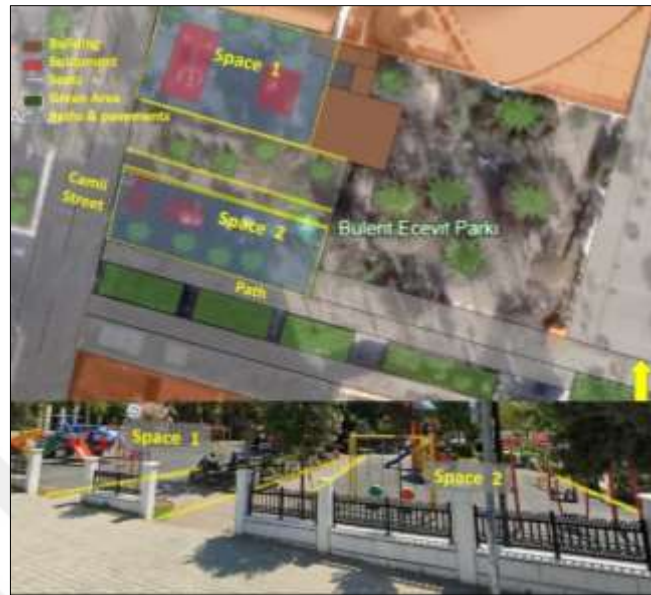


Figure 5.32: Designing Spaces Of Different Sizes In Bulent Playground Design (google.com).



Figure 5.33: Designing Spaces Of Different Materials In Bulent Playground (google.com).

But they also lack designated spaces for children only to congregate or be alone without supervision. There is no consideration of how the zones relate to each other. The study investigated that there is limited fluidity in the spaces design and there is no relationship among the zones,

children were not able of using loose parts or in turn moving them between distinct zones. Sand and water were not available to play with, there are no loose parts between zones that could contribute to creating flow as objects, or can be climbed over stumps or low walls or plant materials which can allow children to pass through its wall.

Children had limited opportunity to interact with living organism or using the trees to invent a certain type of play - whether plants or worms – since they are located only in a particular area. The play space is not designed to allow for chance, no messy zones, places to dig, watery places and sand areas where loose parts provide tools for children's imagination and ability to mold, shape, shift, press, and drizzle.

The play area was divided into sections, with a major play structure positioned in the middle. this type of configuration interrupted their view of the entire play space.

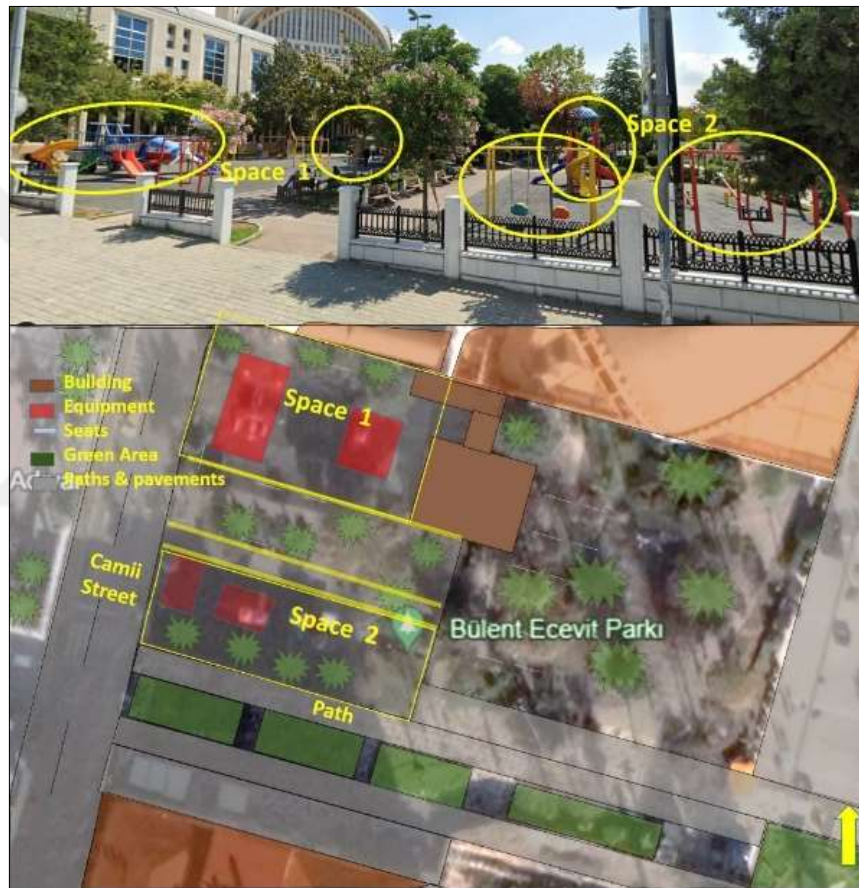


Figure 5.34: Limited Clarity In Design Scheme Because It's Not Related To The Scale And Movement Of Children At Bulent Playground (google.com).

There is a clear entry and exit spaces are provided to the outdoor plays space to prevent accidents from the street side only.



Figure 5.35: Entrances Design At Bulent Playground (google.com).

The sitting equipments are placed in the playgrounds for parent's observation



Figure 5.36: Seating Area At Bulent Playground (google.com).

There are no defined gathering places for social interaction, but since the paved area is about 80% of the play field, it can be used for this purpose



Figure 5.37: The Paved Area Allows Social Interaction At Bulent Playground (by author).

The soundscape is not considered by the design team. the outdoor play spaces were comprised of primarily hard surfaces and little vegetation and close proximity to a busy street, mosque sound was significantly louder than play spaces with soft material and plants. The noise in outdoor play spaces creates a general atmosphere of confusion was noted in the children. The study finds that there are two types of sliding activity, as it shown in Figure 5.39. From sliding in the flat bed slide to the plane shape slide with spiral slide and the other spiral slide.



Figure 5.38: Sliding Activity At Bulent Playground (by author).

There are two type for swinging activity as it shown in Figure 5.40. by regular swing (front and back) and Figure 5.4 by using see-saw (up and down).



Figure 5.39: Swinging Activity At Bulent Playground (by author).



Figure 5.40: See-Saw Swinging Activity At Bulent Playground (by author).

Running, riding the swings, using the stairs, and rolling off the slides are the only available activities. The type of challenge required to stimulate the children's ability to overcome difficulties is in a very limited way.

there are no acceptable risks, which can affect children's personal and physical development positively, this what lacks in this playground designs. And the diversity of equipment is limited (only swings and slides)

There is good maintenance and care of the equipment in this playground, the playground is maintained clean by constantly cleaning the place.

There is limited flexibility in the design of the equipment, for example using airplane-shaped equipment for climbing using ladders, sliding, and observing from the top of the equipment, while other equipment does not have the flexibility for different uses, they all have one function.

There is no consideration for natural landforms and changes in level which add an interest to the site and stimulate a variety of play activities, such as rolling, crawling, sliding, balancing and Jumping—activities that stimulate the vestibular sense.

In this playground, there is no equipments suitable for disabled children. equipments are not age appropriate and there is no equipments suitable for 0-3 years' old. see-saw suitable for 2-5 years' old.

5.2.3 Zorlu Park – Beşiktaş Playground

1,600 m² in area, designed inside a centre, the play area is situated in Zincirlikuyu Zorlu Centre, a quarter of Istanbul, Turkey's European side, in the Şişli district. It is an important intersection that encompasses the Otoyol 1 motorway and connects the Bosphorus Bridge with another significant centre, Mecidiyeköy. It is located on a hilltop on the district's

surround to Beşiktaş in the eastward (Hatlar, 2014). Zorlu Centre uses landscape architecture to combine the old city's historical ambience with four towers that have a futuristic style. Situated in Istanbul's commercial and urban district Levent, it's designed in collaboration with WATG Landscape Architects, by Carve & WATG Landscape Architects (McManus, 2010).



Figure 5.41: Zorlu Park Top View (by author).

During the initially check-ups, an inventory was carried out for the play space:

- a. Play equipment: all play equipment is plastic, wood, rubber with some metal parts.
- b. Swings: 10 baby swings, the towers contain swings.
- c. Ropes manufacture: half sphere shape with steel carved shape.
- d. Slide: giant coloured designed slide, small steel slide.
- e. Bridge between two slides: (half sphere shape each one), with wood and steel handrail.
- f. Trampoline: 3 spaces.
- g. Towers: 2 towers with climbing ropes and 25 swing, slide from the small tower till the floor, the small tower contain 3 large stacked cubic cladded with wooden slabs, the bigger tower contain 4 large stacked cubic cladded with wooden slabs, 4 bird's nests.
- h. Balance rope bridge: 2.
- i. Round boat hole: 1.
- j. Mountain Range coulisse: several rows of walls, labyrinthine system of tunnels, sliding walls, '6 bird's nests' and lookout points and narrow alleys.
- k. Ground cover: Recycled rubber mulch coloured grey, pink, and blue, yellow, purple.

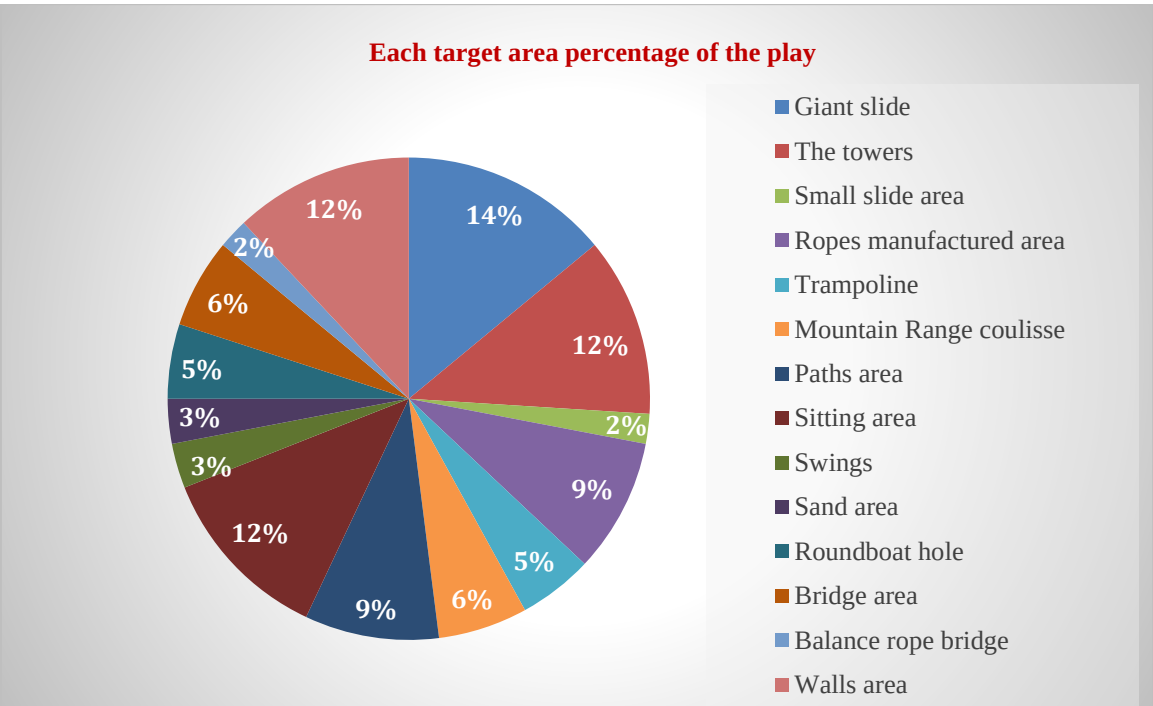
- l. Nature: some trees within the play space, lots of stones, however good views of the surrounding trees.
- m. Topography: 5 different levels.
- n. Paths/ Sidewalks: 5 slope paths leading from the ground level of the park until the small tower, 3 slope paths on the left side from the top point of the small tower to the play space and the bigger tower.
- o. Surrounding landscape: located within Zorlu centre, near cafe and sitting area.
- p. Sun- Shade: there is no shade.
- q. Fenced vs. open: fenced from the street side.
- r. Playground amenities: long carved benches.
- s. Park amenities: benches surrounding the playground, 4 trash cans, and open grassy area.



Figure 5.42: Zorlu Park Play Equipment (by author).

The children spread themselves throughout the recently constructed, diversely designed play area. The giant slide was the most popularity area. The towers area had a play participation rate of 12% and the small slide area 2% of the children who were noticed playing there. The ropes manufactured area was 9%, the trampoline 5 %, Mountain Range coulisse was 6%, the paths area was 9% of the children, the bench sitting area was 12% of the children, and there were 2 groups of children sitting together and talking). The remaining target areas each contained between 3%for swings, 3% for sand area, 5%, Roundboat hole 6% Bridge between two slides and balance rope bridge 2% of the children.

Chart 5.5: Each Target Area Percentage Of The Play At Zorlu Playground (by author).



The majority of scans (44%), which indicated the children playing, were of the functional type. Other types of play included self-focused play (18%), discovery play (18%), solitary play (15%), symbolic play (5%).

The largest percentages of functional play were encouraged by the giant slide and manufactured ropes, which were followed by the paths, swings, trampoline, small slide, Roundboat and balance rope (14%, 9%, 9%, 5%, 3%, 2%, and 2% of scans).

Chart 5.6: Percentages Of Play Types At Zorlu Playground (by author).

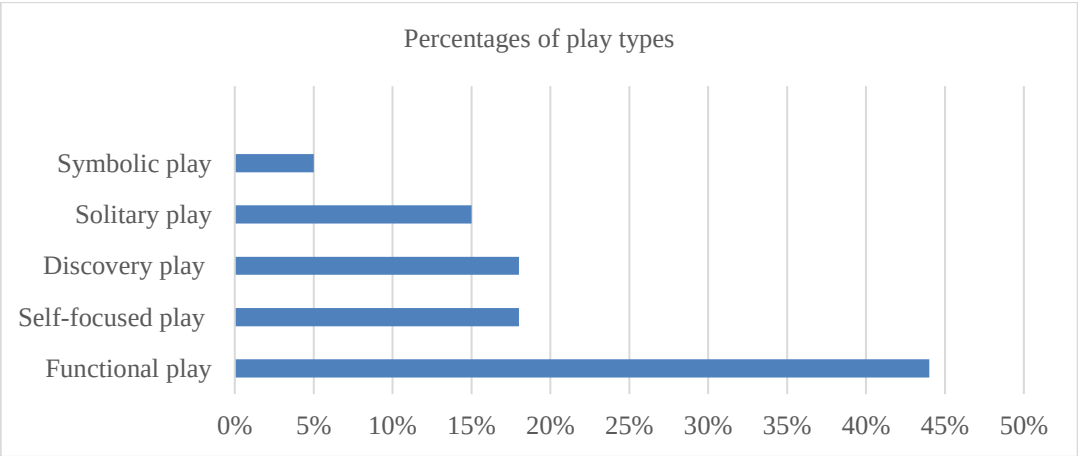




Figure 5.43: Sand Encourages Solitary Play, Mountain Range Encourages Interaction In The Space, The Ropes, Slide And Round Boat Encourage Functional Play (by author).

Solitary play was encouraged by the sand feature (3% of scans in this target area). In any target area, inadequate symbolic play was seen. The Mountain Range coulisse and bridge area had a significant proportion of children exhibiting self-focused behaviours, as evidenced by the scan results (12% and 6% of scans in each target area, respectively). The greatest proportion of discovery play (12% and 6% of scans) was encouraged in the towers and the Mountain Range (walls). a significant proportion of kids in the Mountain Range interacting with other children (12%).

It is noticed that the designed playground (Zorlu) allowed opportunities for deferent types of play, Zorlu play space character types have a modern character which emphasizes the construction's and landscape's systems and the built environment which gives children a visual aesthetic and helps increase play opportunities through diversity of the construction (contemporary playground).

Zorlu play area is close to commercial centre and cafe, Children can enjoy meals there from time to time. there are number of trees which prevents a certain percentage of wind in the winter, also the design itself contains several heights of levels, this gives the play space diversity of the play space. It is noticed that there is visual connection between the playing equipment and the outside at Zorlu playground which gives children a visual aesthetic



Figure 5.44: Visual Connection And Simulation In Zorlu Playground Design (shoptr9.betterdaysarecominginc.org).

There are looped paths and a hierarchy of paths with dominant paths for multi-purposes



Figure 5.45: Looped Paths Design In Zorlu Playground (pinterest.com).



Figure 5.46: Tunnels Design In Zorlu Playground (by author).

These kid-sized tunnels are a creative way to increase a play area's connectivity through the design.



Figure 5.47: Transparent Wall On The Left And Steel Beams On The Right Visually Connect The Indoor And Outdoor Spaces In Zorlu Playground (by author).

Steel beams in the openings allow the observation and a transparent wall visually connects the indoor of the tower where the climbing ropes are located and outdoor spaces. so the children can enjoy being at the top of the tower and observe the people and the playground down.



Figure 5.48: Designing Spaces Of Different Materials And Sizes In Zorlu Playground (pinterest.com).

Change involves a range of differently sized spaces designed in the play area and this what the study investigated at Zorlu playground, this range of spaces accommodate different amounts of children and that the materials of the spaces actually change themselves overtime.

The design of the two towers is an attempt by the designer to create spaces where children are allowed to climb relatively alone. But it also lacks spaces for children only to gather or stay alone without observation.



Figure 5.49: Kids Gathering In Corners And Talking (by author).

In this playground which lacked any subspaces, children are observed huddling in corners to talk or be by themselves.

Zones are areas in the play space that are designed to accommodate particular uses - such as sand play (A. Erikson ,1995).

Zoning is an important concept for the design team to consider, yet they should consider how the zones relate to each other. The study investigated that there is a fluidity in the spaces design and there is a relationship among the zones “space is not composed of functional zones but of the fluidization of functional zones” (A. Branzi et al. ,1998, p.3).



Figure 5.50: The Fluidization Of Spaces In Zorlu Playground Design (pinterest.com).

Sand areas where loose parts provide tools for children's imagination and their increased ability to mold, shape, shift, press, and drizzle. This allow chances for children to play solitary play type (since it is not provided with equipments for construction or water to mix with and build).



Figure 5.51: Sand Spaces Located In Zorlu Playground (by author).



Figure 5.52: Clarity In The Design Of Spaces At Zorlu Playground (pinterest.com).

The playground has a clearer design scheme because it's related to the scale and movement of children, but there is no clear entry and exit spaces which should be provided to the outdoor plays space to prevent accidents.

The circulation of traffic is separated by surrounding the playground with fence, wall and trees to provide the security around the playground from the street side, from the other side it is surrounded by a low bench and some steel barriers.



Figure 5.53: Fence Design At Zorlu Playground (by author).

There is one defined entrance for continuousness of playground's safety.



Figure 5.54: Entrance Design At Zorlu Playground (by author).

Sitting equipments are placed near the playgrounds but not on high level for parent's observation.



Figure 5.55: Seating Area At Zorlu Playground (by author).

There are no specific gathering places or areas for social interaction through which children can expand and enhance their social relationships with each other. The paved area is about 60% of the playground area and is used to move between equipment and to help parents assist children while they play.

The study finds there are several levels of difficulty for climbing activity, as it shown in Figure 5.59. From climbing small ropes to the wall of limited height to the larger wall and then to the ropes in the tower (higher height).



Figure 5.56: Several Levels Of Challenge For Climbing Activity At Zorlu Playground (by author).

Even for sliding, there are two levels of difficulty for the sliding activity. From small slide to giant slide.



Figure 5.57: Two Levels Of Challenge For Sliding Activity At Zorlu Playground (by author).

For the slipping activity the same is the case, slipping from the short ropes near the wall to slipping from the beam in the tower.



Figure 5.58: Two Levels Of Challenge For Slipping Activity At Zorlu Playground (by author).

Also form turning, using the round boat (by feet) to turning the whole body.



Figure 5.59: Two Levels Of Difficulty For Turning Activity At Zorlu Playground (by author).

Walking in the straight paths to walking and running on the multi-level ground and on the bridge and jumping using the trampoline.



Figure 5.60: Several Types Of Difficulty For Walking & Running & Jumping At Zorlu Playground (by author).

Acceptable risks, that affect children's personal and physical development positively, is allowed in this playground designs, especially in high-height climbing rope equipment that provide an acceptable risk of falling, in sliding the giant slide, in climbing the high towers and swinging in the last floor and in slipping from the beam at the bottom of the tower. It can affect children's personal and physical development positively, and there is diversity of equipment design with different textures (swings, slides, difficult high rope climbing, trampoline, climbing ropes in the towers climbing walls). different kinds of equipments provide play opportunity for children of all abilities.

There is good maintenance of play spaces, this includes everything from litter-picking to checking for hazards and replacing the features, the Playground kept hygienic by cleaning the place constantly also there is supervision to prevent older people from playing by using the play field equipment.

There is flexibility in the design of the equipment, for example using climbing ropes manufactured for climbing, swinging, and observing from the top of the equipment, using towers for climbing, swinging, slipping and observing, using the walls for climbing, walking in its paths and for observing. they have multiple functions.

In this playground, the swings are suitable for disabled children due to their size and height from the ground. additionally, the path of movement and entrances of activity areas is designed broader and even. there are equipments suitable for 0-3 years' old like tunnels and also sand area.

5.2.4 Botanik Park –Bakirkoy Playground

Designed inside a natural park. 1,200 m² in area, situated inside the boundaries of the Bakırköy district in the province of Istanbul, and founded in 2013 by Bakırköy Municipality, the park has the tallest two playing towers in Turkey, standing at 11,50 meters each. Other features include 11 themed gardens, 3 wind turbines, a waterfall that cascades into a pool, playing fields, an organic pond, decorative pools, areas for birds that migrates, artworks, picnic areas, and parking areas. There are about 262,500 plants there, with a rich diversity of plants, including enormous trees (Ayar, H., Ayyıldız Durhan, T., Karaküçük, S. 2021).



Figure 5.61: Botanik Park-Top View (earth.google.com).

Inventory of play spaces:

- a. Play equipment: all play equipment is steel, wood with some plastic parts.
- b. Two pyramids Manufacture: connected together by two carved giant slides and one rope bridge.
- c. Castle structure: connected with the pyramids by a long rope bridge and contain wooden stairs.
- d. Bridge between two slides: (half sphere shape each one), with wood and steel handrail.
- e. Spring animal: 7.
- f. Equipment for digging and playing in sand: 12 (steel and wood parts).
- g. Balance rope bridge: 3.
- h. Seesaw apinner: 2.
- i. Houses of the Smurfs: 4.
- j. Ground cover: sandy ground and gravel with lots of grass area within and around the play area.
- k. Nature: some trees within the play space, lots of stones, however good views of the surrounding trees.
- l. Topography: some variation in the level.
- m. Paths/Sidewalks: lots of paths around the playground.
- n. Surrounding landscape: located within natural garden.
- o. Sun- Shade: there is no shade.
- p. Fenced vs. open: the garden fenced from all sides.
- q. Playground amenities: lots of benches.
- r. Park amenities: benches surrounding the playground, trash cans, open grassy area, trees, sculptures, lakes, fountain.

This playground is located between Bakirkoy metro bus street and Bakirkoy metro way.



Figure 5.62: Location Of Botanik Playground (earth.google.com).



Figure 5.63: Botanik Park Play Equipment (by author).

The most popular space was the natural area represented by the sand area and its equipment (24% of children) and the seesaw area (0%), the smurfs houses 7%, fountain area 10%. The paths area was 17%, Each of the remained targeted regions are among 20% for the pyramids area, the roof of service building 5% of the observed children, 17% of the children for the spring animal.

Chart 5.7: Each Target Area Percentage Of The Play At Botanik Playground (by author).

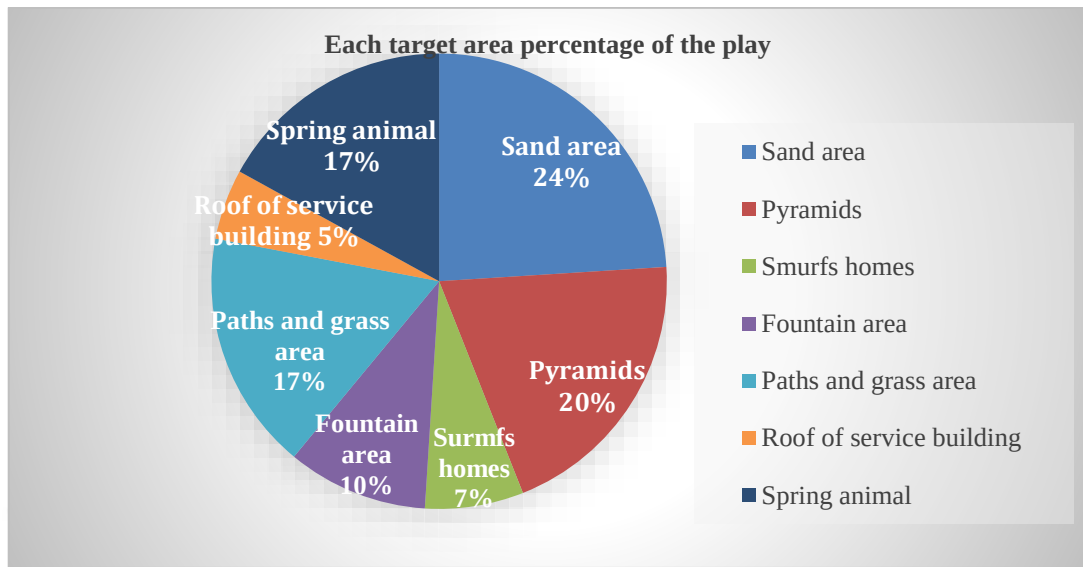


Figure 5.64: Sand Area Offers Opportunity For Constructive Play (by author).

The majority of scans demonstrated the children playing functionally (37%), which was followed by self-focused play (5%), constructive play (24%), symbolic play (24%), and solitary play (7%), discovery play (3%). The areas with the greatest proportions of functional play were the pyramids and the spring animal (20% and 17% of scans in each target area, respectively).

Chart 5.8: Percentages Of Play Types At Botanik Park (by author).

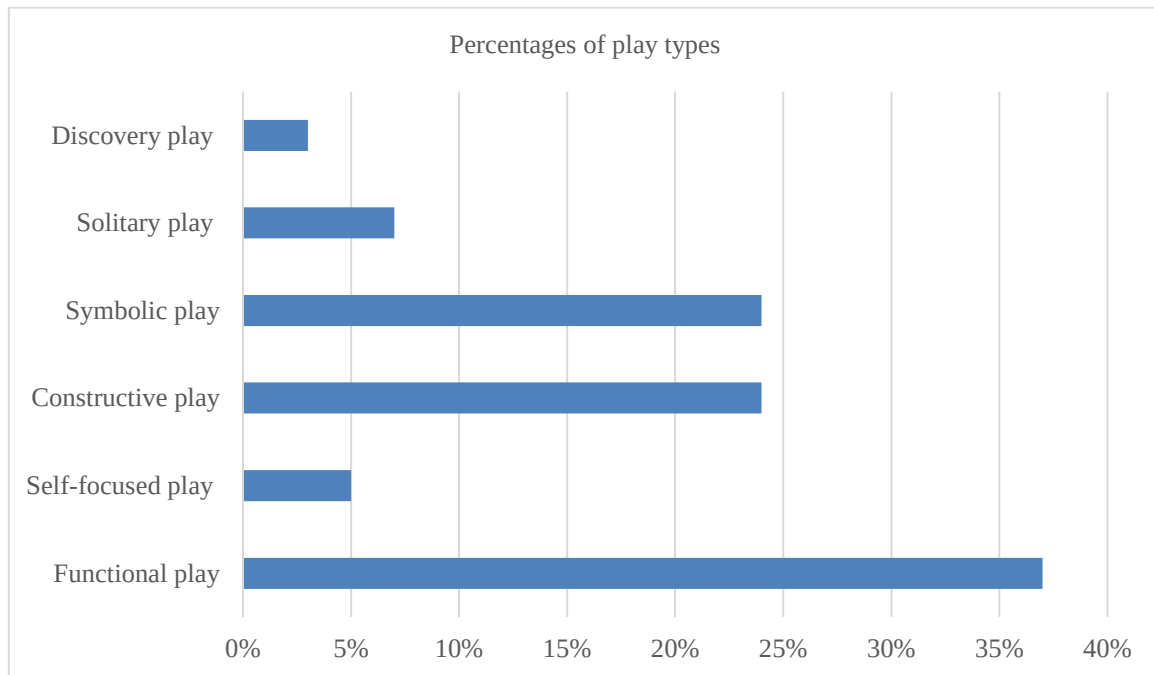


Figure 5.65: Pyramids And Spring Animal Offers Opportunity For Functional Play (by author).

Of all the features in this target area, the sand feature encouraged the highest percent of constructive play (24%). There was very little self-focused play in any target region. The scans showed that a significant proportion of kids were playing solitary in the fountain area, which has sculptures of horses with wings (10%). Notable percentages of symbolic play were encouraged by the paths area and Smurfs houses (17% and 7% of the children observed).

It is noticed that this natural playground allowed opportunities for deferent types of play. A notable number of children were observed on the edges of the paved and grass areas, playing together(symbolic), and talking together (solitary)given that children at Botanik playground, picking the fruits (discovery).

It can be noticed that the Botanik playground allowed a certain percentage of playing on the paved area, despite the diverse of the equipment which is offered there and the limited space of the paved area, and this can make sense due to the natural park in which it located and the clear oxygen and healthy environment all these reasons allowed for social play and interaction among children which is the lack point in the other types of playgrounds.



Figure 5.66: Path Area And Smurfs Houses Offers Opportunity For Symbolic Play (by author).

Children utilized the grassy playgrounds (like the Botanik playground) for active, functional play as well as running and chase games, according to observations. The actions on the paved and grassy areas were largely identical. Most of the children that were observed engaged in either symbolic or functional active play. At the Botanik playground, the grassy area, paths, and sand area encouraged constructive as well as solitary and symbolic play.

The character type of Botanik play space is designed to be "organic character type" refers to a design that incorporates materials that kids may manipulate and emphasizes the ever-changing outdoors (Smurfs' houses and the sand area) and this increases play opportunities for children. In Botanik area, it's a natural park and there is wide range of trees and it is preventing the effect of the sun's heat in the summer.



Figure 5.67: Wide Range Of Trees At Botanik Playground (google.com).

Also the lake, fountain, sculptures and statues gave the environment a good view and healthy oxygen and provides a better environment for play and psychological comfort for the child.



Figure 5.68: Lake And Wild Animals At Botanik Playground (google.com).



Figure 5.69: Fountain And Statue At Botanik Playground (google.com).

It is noticed that there is visual connection between the playing equipment and the outside at Botanik playground which gives children a visual aesthetic



Figure 5.70: Visual Connection At Botanik Playground (google.com).



Figure 5.71: Simulation In The Design Of Botanik Playground (google.com).



Figure 5.72: Looped Paths Design At Botanik Playground (google.com).

Looped Paths And A Hierarchy Of Paths With Dominant Paths Give Children The Opportunity To Explore The Space At Different Speeds And To Make Decisions.

This playground takes children in a stair and loops in several heights to reach their play space, making outdoor play more interesting but it is lack tunnels in the play space which can be used to connect the spaces in a playful way.



Figure 5.73: Several Heights In The Design Of Botanik Playground (google.com).

There are several levels in the design of the ground since its located in a natural garden, children can enjoy being at the top and observe the people and the playground down which helps extending and expanding their visual awareness. Using the top of building as a place for observing consider a positive design element.



Figure 5.74: Top Of Service Building In Botanik Playground (by author).

The study found there is a range of spaces accommodate different amounts of children and that the materials of the spaces actually change themselves overtime.



Figure 5.75: Designing Spaces With Different Materials In Botanik Playground (google.com).

Many of the design guidelines for children's outdoor play spaces stress the importance of variable sized spaces to accommodate different numbers of children and different uses which the study investigated at this playground



Figure 5.76: Designing Variable Sized Spaces In Botanik Playground (google.com).

At Botanik playground there are open and under the trees spaces allow children to be alone in the park but it also lacks designed private spaces for children.

Plants not only modify the climatic conditions and provide light shade, but the flowers, seeds, and leaves produced by this living material can provide open-ended play props for children. An example of continuous change that helps develop the child's awareness of the surrounding environment and thus discovery, thinking and growth is the presence of plants whose lengths and sizes vary from season to season. In Botanik, the playing field is located in a garden planted with many trees and grass which reduces external noise, but it is exist near the metro bus way.



Figure 5.77: Open Spaces Allow For Being Alone At Botanik Playground (google.com).

Some children were observed picking fruits from trees and jumping to catch them, and this means that it stimulates social interaction between them. The study investigated that the fluidity in the spaces design is limited and there is no relationship among the zones. For example, the spring animal size compared to the giant pyramids in the same area is not related to the child scale.



Figure 5.78: No Fluidization In Spaces Design At Botanik Playground (earth.google.com).



Figure 5.79: Equipments Scale Comparison At Botanik Playground (google.com).

Also the equipment area is also very small compared to the size of the garden (1% of area). it is also lacks loose parts such as low walls, stumps which can be climbed over, plant material, which can allow children to pass through its walls or water supply area despite the fact that it is a natural playground. Young children will often engage in careful watching and observing of their environment. Plants and animals index changes in the season and growth in general.



Figure 5.80: Children Watching And Observing Their Environment At Botanik Playground (google.com).

There are some messy zones at this playground which are places to dig, sand areas where it provides tools for children's imagination and their increased ability to mold, shape, shift, press, and drizzle



Figure 5.81: Sand Area With Sand Play Equipment At Botanik Playground (by author).

Chance involves stimulating spontaneous exploration - children exploring on their own. Spontaneous exploration links physical movement with the mind (hitting a moving ball) and it is an equally important contribution of the outdoor play space to child development.



Figure 5.82: Playing With The Ball At Botanik Playground (by author).

These areas, where a major play structure took the play space's centre. children had a difficult time maintaining play involving movements like tag or imitative play because the play structure divided the play into disconnected peripheral spaces. this type of configuration interrupted their view of the entire play space, but there is a large space around the play area where the children can interact socially very easily and play hide and seek or discover the mystery of the garden.



Figure 5.83: Limited Clarity In The Design Of Spaces At Botanik Playground (earth.google.com).

The circulation of traffic is separated by surrounding the park with fence and trees to provide the security around the playground from the streets side and also fences located within the park from the lake sides.



Figure 5.84: Fences Designs At Botanik Playground (google.com).

There are three defined entrances for continuousness of playground's safety.



Figure 5.85: Entrances At Botanik Playground (pintrest.com).

Sitting equipments are placed near the playgrounds but not on high level for parent's observation.



Figure 5.86: Seating area at Botanik playground (by author).

There are no specific gathering places for social interaction as it is located within a natural park so that children can interact anywhere.

The soundscape of the Botanik play space was considered by the design team. the study found that this outdoor play spaces with soft material, soil, sand, plants, but not distant from traffic noise was louder in sound and noise. The study finds there are levels of difficulty(challenge) for climbing activity, as it shown in Figure 5.90 from climbing bridge of ropes to the several levels of height in the pyramid.



Figure 5.87: Levels of difficulty for climbing activity at Botanik playground (by author).

For sliding, there is kind of difficulty for the sliding activity. Due to the giant slide size and height.



Figure 5.88: Challenge In The Sliding Activity At Botanik Playground (google.com).

For sand play, there is several types of challenge for the digging and lifting and construction activity.



Figure 5.89: Several Types Of Challenge In Sand Play At Botanik Playground (by author).



Figure 5.90: Two Types Of Challenge In The Balance Activity At Botanik Playground (by author).

For balancing activity, there is two types of challenge for the using the spring animal and see-saw equipment.

Acceptable risks, that affect children's personal and physical development positively, is allowed in this playground design, especially in high-height climbing rope pyramids equipment that provide an acceptable risk of falling, in sliding the giant slide, in walking on the rope bridge. It can affect children's personal and physical development positively, and there is kind of diversity in the equipments design with different textures (swings, slides, high rope pyramids climbing, see saws, spring animals, smurfs homes). different kinds of equipments provide play opportunity for children.

There is good maintenance of play spaces, this includes everything from litter-picking to checking for hazards and replacing the features. There is flexibility in the design of the equipment, for example using climbing ropes manufactured for climbing, swinging, and observing from the top of the equipment, using ropes bridge for walking and observing, using sand for constructing and there is equipment for digging in the sand and mixing it, these equipments have multiple functions.

In this playground, there is limited consideration for disabled children play. equipments are not age appropriate and there is no equipments suitable for 0-2 years' old. Spring animal suitable for 2-5 years' old.

5.3 DISCUSSION

The children were using the four playgrounds in quite different ways, according to the findings. The study uses the literature as a guide to provide some plausible explanations for the findings concerning children's play behaviours and choices in this discussion

Observation results show that outdoor play areas with different design can affect the play types, Among the selected areas for field research,

Botanik Park has the highest diversity of play types in overall evaluation. The main reasons for that are it is located in a natural park and has equipments which are attractive for children, climbing rope pyramids equipment provide an acceptable risk of falling, also in walking on the rope bridge. It can affect children's personal and physical development positively

Plants provided social play for children by picking their fruits together, but it not used to provide opportunities for other types such as playing in tree homes, there is no effective use of the ground and heights to provide greater play opportunities such as tunnels for young children, looped paths and a hierarchy of paths with dominant paths give children the opportunity to explore the space at different speeds and to make decisions. There are no

loose parts can be used for construction play. The design didn't take private spaces into consideration which are crucial to development because they allow retreat and enable children to behave according to their mood and give shy children the opportunities to explore feelings and inner turmoil they prefer not to reveal to others (A.R. Olds, 1989, p. 12.)

At Botanik playground, children who had the opportunity to interact with living organism - whether plants or worms - have the chance to describe what they were experiencing to each other. This verbal venting is one of the initial activities to literacy, and ought to be taken into account when deciding whether plants ought to be included in the play area.

Children do not have the chance to play with space forming material (especially in this natural playground with natural materials) in order that they may invent, construct, evaluate, and modify on their own. This is extremely important to young children, this aspect was not taking into design consideration.

Spontaneous exploration can "enhance perceptual motor functioning - gross motor, fine motor, spatial awareness activities, directional awareness, balance, integration (hitting a moving ball), expressive activities. It also expands the children's cognitive understanding of their play space (J.L. Frost and B.L. Klein, 1979, p. 40.).

There is an increase in the number of children visiting this park, and this is logical due to the different type of equipment and its location within a natural park.

The children appeared to be more secure and more gentle on the grassy surfaces, which probably prevented serious wounds from occurring from the hard pavement's hits and scratches (Sandseter 2009). Moreover, it is also allowing the children to freely choose their own rule and the game itself which encouraged the self-independence of the child and the freedom of making choices Which has an impact on the child's strict personality.

Through less structured play and more unstructured free-play, children appeared to be able to "extend their playing selections" (Moore and Wong 1997, 91). in the greenery of the playgrounds that were the subject of this study.

From the observation, the playground encourages 6 types of the play, although the representation of these types is limited, this means that it is the best playground chosen concerning how it affects the growth of the child.

The functional play percentage is lower comparing to other playground and this due to the existence of the sand area, the type of construction play was available, the use of the grass

area and paths for social play, Smurf houses encouraged pretend play, the use of the roof of service buildings for observation and exploration, the fountains area used for gathering, playing together and contemplating, dreaming and observing. It can be concluded that due to the availability of these types of equipment and spaces, the types of play have increased and varied, and this subsequently affects the development of children, because each of these types stimulates certain growth capabilities in children, as shown in the (Table5.5). Thus, this thesis discovers that the designs of the playgrounds affects and determines the child's development in a direct way.

Zorlu playground, has the second highest diversity of play types in overall evaluation. The main reasons for that are it has equipments which are attractive for children, modern character gives children a visual aesthetic and helps increase play opportunities through diversity of the construction.

There is a lack of equipment for digging, mixing and the small space affected on decreasing the number of kids who played in the sand area, as well as weather conditions such as rain, the lack of canopies to protect the area from getting wet, no water source to use for the construction process.

There are no loose parts such as low walls, stumps which can be climbed over, plant material despite the fact that it is a natural playground.

The ground and levels were used in an innovative, interactive way to stimulate discovery play. looped paths and a hierarchy of paths with dominant paths for multi-purposes and subordinate paths extending from these main paths give children the opportunity to explore the space at different speeds and to make decisions (S. Herrington ,1999). there is clarity in the plan of the design that helps children understand the space and thus the sense of place and expand their awareness of the place (the ratio and proportion between the spaces is reasonable compared to the rest of the playground). What is flawed in the design is the small area for movement, 60% of which is not enough to play game with rules inside the play area. There is transparency between the inside and outside in the towers this connectivity contributes a sense of place, (Modena, Italy: Grafche Rebecchi Ceccarelli s.r.l.,2009, p.41). There is limitation in the interaction with nature due to the playground is located inside a centre, there is no loose parts, there is no spaces designated for children to stay alone, the acceptable risk is what distinguishes this arena is through specially designed, carefully

selected equipment, such as high towers and a giant slide, there are swings for disabled children, the tunnels that encourage crawling and playing for younger children.

Diversity in the types of play due to the type of equipment designed specifically for this place and the diverse of context.

Functional play percentage is the second lowest percentage in the selected arenas due to the equipments that stimulate other types of play, such as the sand area that encourages solitary play, the maze represented by multi-height walls that stimulate discovery and exploration play and symbolic play by interacting the children with each other to climb, and the bridge area that stimulates contemplation and observation.

It can be concluded that due to the availability of these types of equipment and spaces, the types of play have increased and varied, and this subsequently affects the development of children, because each of these types stimulates certain growth capabilities in children, as shown in (Table 5.6). Thus, this thesis discovers that the design of this playground affects and determines the child's development in a direct way.

Bulent play space character types is designed in a Modular character type which refers to a play area where equipment utilizes up most of the space.

lack of designated spaces for children only to congregate or be alone without supervision, "to behave according to their mood and give shy children the opportunities to explore feelings and inner turmoil they prefer not to reveal to others" (A.R. Olds ,1989, p. 12.).

Bulent playground paths design is in straight lines the same as lines of the context and building surround the play area, according to L.G. Shaw ,1987, p. 191" unifying the play yard design unifies the play experience and increases significantly the time spent engaged with the physical structure of the place".

the play space is not designed to allow for chance, no messy areas, positions to dig, watery spaces and sand fields where loose parts offer items for children's creativity and ability to form, design, change, press, and pour.

The circulation of traffic and people are separated by surrounding the playground with fence and this provides the security around the playground.

There is no consideration of how the zones relate to each other. The study investigated that there is limited fluidity in the spaces design and there is no relationship among the zones.

Sand and water elements were not available to play with, there are no loose parts between zones that could contribute to creating flow as objects, or can be climbed over stumps or low walls or plant materials which can allow children to pass through its wall.

There is no interaction between plants and children since it is not located in a natural park.

The percentage of functional play in this playground is high and this type of playground designs represents the majority of Istanbul playground, the open space in the playground encouraged the symbolic play for social interaction among children, Its location in a popular area close to the centre of the Avcılar region encouraged diversity in the area and context, People interaction in the café next door, increases the opportunity for children to contemplate , observe passers-by and the environment (self-focused play) by using the air-plain shape manufacture. The challenge offered in this playground is very limited since there is no high-heights equipment or an obvious acceptable risk. A lack of challenging things to do in a play space has been the primary reason for increases in bullying. According to Play for All Guidelines, “without taking risks, children cannot learn to their full potential.

Table 5.1: The Functional Play Percentage At The Manufactured Equipment For Each Playground (by author).

Deprem	Bulent	Zorlu	Botanik
Functional Play	Functional Play	Functional play	Functional Play
97%	70%	44%	37%

The variety of types of play is limited (only 3 types) because the equipment is pre-fabricated and not designed to suit the place specifically, as is the case with the design of Zorlu Arena. Thus, arranging this type of playgrounds is among the least influential and contributes to the child’s development and enhancing his abilities.

Deprem play space character types are designed in a Modular character type

Lack of spaces that allow children to be alone, the flowers, seeds, and leaves produced by this living material can provide open-ended play props for children, but they are not put to use in this garden.

There is no opportunity for the child to create, manipulate, and leave an impression on the play space. The design team did not consider how the play space can allow for chance as,

places to dig, watery places and sand areas where loose parts provide tools for children's imagination and their increased ability to mold, shape, shift, press, and drizzle

In this type of areas where a major play framework took the play space's center, children had a difficult time maintaining play involving movements like tag or imitative play because the play structure divided the play into disconnected peripheral spaces. this type of configuration interrupted their view of the entire play space. fence designs protect natural areas without compromising visual quality.

This arena allows functional play due to the type of equipment used and the way the arena is designed. Also, the functional equipments area allowed for Symbolic play by playing together, climbing and walking.

The variety of types of play is very limited (only 2 types) because the equipment is pre-fabricated, encourages the functional play only and not designed to suit the place specifically, as is the case with the design of Zorlu Arena.

Thus, this arena is the least influential and contributes to the child's development and enhancing his abilities.

Table 5.2: The Playing Percentage At The Paved Area For Each Playground (by author).

Deprem	Bulent	Zorlu	Botanik
Functional Play	Solitary play	Functional play	Solitary play
7%	18%	9%	10%

Table 5.3: The Playing Percentage At The Grass Area For Each Playground (by author).

Deprem	Bulent	Zorlu	Botanik
Around the play area	X	X	Constructive, functional, Symbolic ,solitary play
			25%

The case studies were re-examined for their efficacy in fostering appropriate child development using the data gathered throughout the literature review in this thesis. Below is an assessment of each equipment advantages and recommended improvements that would raise its value:

Table 5.4. An Overview Of The Interactions And Its Benefits At Deprem Playground (by author).

Equipment Type	Functional Play	Construct ion play	Symbolic play	Self-focused play	Solitary play	Discovery play
Swings	Strengthening each leg, gripping firmly with the hands, Greater strength in the muscles Increases heart rate and burns calories	X	X	X	X	X
Wooden manufactur ed	Gross Motor Skills perception of location	X	X	X	X	X
Ropes	Gross Motor Skills, which support the development of foot-to-eye and eye-to-hand collaboration perception of location	X	X	Observing and contemplating on the top of the equipment	X	X
Turnover-rope s	Gross Motor Skills , awareness of the body, strengthening hands	X	X	X	X	X
Spring-items	Strengthen the muscles	X	X	X	X	X

Table 5.5 An Overview Of The Interactions And Its Benefits At Botanik Playground (by author).

Equipment Type	Functional Play	Construction play	Symbolic play	Self-focused play	Solitary play	Discovery play
Spring-items	Strengthen the muscles	X	X	X	X	X
Smurfs' homes	X	X	Enhancing the socialization by playing dramatically together and with parents, hide-and-seek	X	X	There is a mystery in the new forms

Table 5.5 An Overview Of The Interactions And Its Benefits At Botanik Playground (by author)

“Table Continued”.

Pyramid-shape manufacture	Gross Motor Skills, which support the development of foot-to-eye and eye-to-hand collaboration perception of location	Solving challenges	Enhancing the socialization by climbing together, cooperation and the sharing of ideas for how to climb and reach.	X	Sense of independence for accomplishing the goal of reaching to a higher level	reaching to a higher level helps for expanding the awareness of the heights and ability to see the big picture and discover the whole park and regions
Sand	development of eye-to-hand collaboration	Imaginative, creativity, making decisions, thinking mathematically Rational thinking based on science. Solving challenges	Playing in groups, Forming new relationships		Pride in one's achievement	Acquiring knowledge of natural phenomena Sense of place
Grass area and pathway	Running in nature for long areas strength in the muscles		Playing in groups: Forming new relationships, picking fruits from trees together	Meditating in nature and trees, and running long distance in nature alone since there is feeling of safety in the park	Pride in one's achievement feeling after picking fruits from trees	Acquiring knowledge of natural phenomena , discovering new areas due to the variation for existing statues and trees and fountains and ramps in deferent heights

Table 5.6 An Overview Of The Interactions And Its Benefits At Zorlu Playground (by author).

Equipment Type	Functional Play	Construct-ion play	Symbolic play	Self-focused play	Solitary play	Discovery play
Slides	Perception of location, learning the flexibility and losing control of the body	X	X	X	X	X
Towers	Gross Motor Skills, which support the development of foot-to-eye and eye-to-hand collaboration perception of location, slipping enhance the trust the self and flexibility	X	X	X	Sense of independ-ency for accompli-shing the goal of reaching to a higher level	Reaching to a higher level helps for expanding the awareness of the heights and ability to see the big picture and discover the whole park and regions
Sand	X	X	X	X	Pride in one's achievem-ents, Imaginati-ve skills , playing independ-ently	Acquiring knowledge of natural phenomena, Sense of place
Ropes	Gross Motor Skills, which support the development of foot-to-eye and eye-to-hand collaboration perception of location	X	X	Observing and contempla-ting on the top of the equipment	X	X
Trampolin e	Promoting gross motor skill development and overall physical providing a great source of deep brain stimulation information.	X	X	X	X	X

Table 5.6 An Overview Of The Interactions And Its Benefits At Zorlu Playground (by author)

“Table Continued”.

Mountain Range coulisse & bridge area	Strengthen the muscles by climbing and running	X	Enhancing the socialization by playing dramatically together	Observing and contemplating on the top of the maze	X	X
Swings	Strengthening each leg, gripping firmly with the hands, Greater strength in the muscles Increases heart rate and burns calories	X	X	X	X	X
Roundboat	help children with autism increase vestibular stimulation, increase development of kinaesthetic awareness and help develop strength, coordination, and balance.	X	X	X	X	X
Pathway	Running Strengthen the muscles	X	X	X	X	X

Table 5.7 An Overview Of The Interactions And Its Benefits At Bulent Playground (by author).

Equipment Type	Functional Play	Construction play	Symbolic play	Self-focused play	Solitary play	Discovery play
Swings	Strengthening each leg, gripping firmly with the hands,	X	X	X	X	X

Table 5.7 An Overview Of The Interactions And Its Benefits At Bulent Playground (by author)
“Table Continued”.

Slides	Get a better sense of their position and location as they slide, using proprioception. Sliding also helps develop the vestibular system as kids move swiftly down a slide and come to a stop	X	X	X	X	X
Paved area	Playing with the ball Strengthen the muscles	X	Enhancing the socialization by playing dramatically together	X	X	X
See-saw	builds gross motor skills, it strengthens core muscle strength and learn critical push-pull skills to gain and keep momentum	X	X	X	X	X

In terms of physical growth, the study suggests Provide natural elements for gross and fine motor development such as trees, sand, and/or garden plots.

However, there is some multisensory encouragement equipment for cognitive growth, including colourful apparatus and a ground covering. the study suggests Include some undefined spaces for dramatic, imaginative play. Provide natural elements such as plant material within the play space for greater multi-sensory stimulation. Encourage wildlife with an animal like, ducks, chickens garden.

In terms of emotional growth, it is noticed that some play areas have views of a lake. Children can find a quiet place below or observe others from platforms and raised equipment. the study suggests offer a wider variety of open and closed spaces. Bring nature inside the fence. Vary the heights of platforms or provide rocks at different heights for graduated challenges and accomplishable goals.

In terms of social growth, the study suggests Include a wider variety of open gathering spaces and include flexible seating that can be moved using teamwork. Spaces should vary in how open or closed they are, as well as in height.

In terms of parental bond, the study suggests Include semi-enclosed spaces that are visibly accessible for parents. Provide vegetation that is sized correctly as to not block views. Add more options for activities that parents and children can do together.

In terms of sense of place, the study suggests offer loose parts to allow children to create their own imaginative play space. Include sculpture to help differentiate the space. Design the space to suit its climatic conditions and the surrounding environment of the neighbours. Sand, mud, gravel, and vegetation (fallen or picked) are materials that can be shaped and are advocated by most of the literature concerning quality child play environments. Children had shorter durations of play where change was limited. Play durations were shorter where sand and water were tightly controlled (i.e. it could not be mixed or transported across the play space (Herrington ,2006, P 29), which is the case of Botanik playground. The design team can encourage spontaneous exploration activities in the play space by creating areas that encourage children to investigate. This can be achieved by considering the physical height of children - what can they see from their height? How can a sense of mystery be created with plant material, low walls, or terrain? Stepping stones and plant material in strategic parts can also encourage movement and understanding of the play space (S. Herrington and M.K. Studtmann ,1998).

The research suggests designing the paths in a way that encourages the social interaction between children, see (Figure 5.91).



Figure 5.91: Natural Circular Path Encourage The Social Interaction (outdoorplaybook.ca).

The research suggests designing the grass area in a way that encourages several types of play, see (Figure 5.92).



Figure 5.92: Using The Green Area As A Slide (stmaryspsmaghera.com).

The water canals can be used in a way that stimulate playful competitions and its required supplying the playground with loose parts for making the small paper or cartoons boats which provide an opportunity to the construction play, see (Figure 5.93).

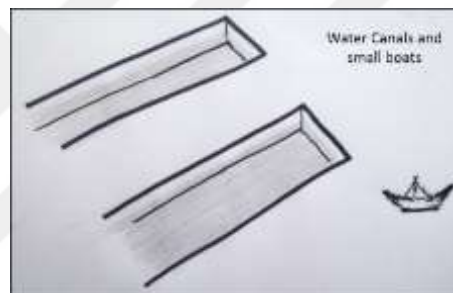


Figure 5.93: Water Canals & Paper Boats Can Be Used To Encourage The Construction And Social Play (by author).

It's also suggests providing the natural area with loose parts to constructs several type of food (pretend play) and constructions which enhance the imagination of the children (Figure 5.94).



Figure 5.94: Providing Loose Parts To Encourage The Construction And Social Play (pinterest.com).

Plants in the play spaces were not an alternative due to maintenance or the perceived fragility of plants, play spaces that incorporated vigorous low maintenance plants created sensory rich play spaces with numerous play props (Herrington ,2006, P30). And the tunnels in the grass or the natural area can be used for playing hide and seek or for crawling for infant's babies see (Figure 6.55.95)



Figure 5.95: Using Canals In The Grass Area For Social Play (pinterest.com).

Trees, bushes, stones, and logs indicate a variety of positions to jump, climb, run, hide, and interact on the greenery of outdoor areas. Natural, movable materials like sticks, leaves, branches, and rocks offer countless chances for creative play like constructing huts and shelters, which is a delightful and nearly universal childhood experience (Cobb 1977; Sobel 1993).



Figure 5.96: A Water Canal Can Be Used To Encourage The Social Interaction (stmarypsmaghera.com).

A sandbox with driftwood that the kids could raise and lower to test a variety of skills is one feature that allow the children to practice balance. Another is wheelchair ramps that vary in height.

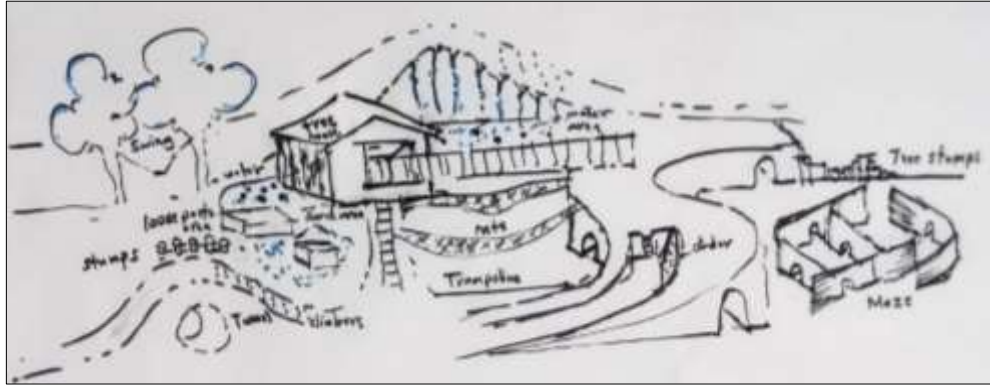


Figure 5.97: Imaginative Playground Design (by author).

6. CONCLUSIONS

This chapter includes a summary of the study, findings and discussions, implications for practice, and recommendations for further research.

The research conducted a field investigation to examine the characteristics of public playground components and it addressed how playground design elements affect young children's growth requirements in regard to pertinent literature. Additionally, Parten's (1932) social participation categories and Piaget's (1962) categorization of play types are significant resources of information. In addition to assessing play areas and equipment from a scientific perspective.

The study explained the playgrounds in history and playgrounds design types, in order to give an overview of the design of playgrounds in general, the types of play, their importance, and the impact of each of them on the psychological and mental development of children were investigated, also the design criteria for playgrounds were studied to analyse the selected playgrounds according to these criteria.

Playgrounds equipment ought to motivate children to take calculated risks and provide a progression of difficulties so they can learn how the ability to decide, take turns, lead, learn about development and natural phenomena, classify, play in a team, form new relationships, feel proud of one's accomplishments, use mathematics, reason scientifically, and solve challenges.

If the only purpose of the elements for playgrounds is to promote physical skills, then designing of its components will be insufficient, though the design methodology of today needs to encourage creative and constructive growth, according to this perspective, it's critical to offer children tools for play that they can move around, interact with, investigate, and use in a wide range of aspects.

Playgrounds that encourage challenge curiosity can aid children in realizing their capacity for creativity. Taking these things into account, it might be said that play equipment concepts are evolving to emphasize procedures over product, with a focus on diversity and interaction. An additional crucial factor that seems to be restricting playing outside is technological advancement. While allowing children to invest the majority of their time staying inside

watching television and engaging online or desktop games are actions that take some period from connections with others and their need to be outside.

The study's findings highlight the value of play for children's growth and the necessity of giving them access to imaginative play spaces so they can advance cognitively, psychologically, and emotionally. The study investigated that the playgrounds equipments offered today, only represents a small portion of what children may interact with

It has become obvious that children are required to be able to play with a variety of activities since each one accelerates and promotes a different growth demand.

As a result, it was investigated that the environment, which facilitated the greatest variety of play, would be more valuable.

Deprem and Botanik playgrounds are situated in an entirely green setting, but the natural surroundings were not made use of

Most play areas that are open for use, particularly during summertime, lack water features, to create constructions, to play, to combine material and sand, consequently, this can enhance the standard of social play and social interaction between children. Even though there are water supplies all over Deprem park, they are not taken into account when designing the playing area as a feature that encourages social and collaborative play.

Botanic Park offers more chances for play, exploration, and a sense of access, liberty, and achievement. This is a result of the garden's layout and the existence of a particular theme that connected each element to its highs and lows, encouraging more kids to use it.

Deprem and Bulent play spaces have a modular design, meaning that the apparatus takes up the majority of the area and leaves limited area for other types of play, the "organic type" layout of the Botanik play space includes elements that children can manipulate such as the sand area and provides a setting for imaginative play such as the smurfs homes, Zorlu play space characteristics highlights the structures of the constructed environment, surroundings and the structure itself. In term of context, the variety of scenery at Deprem and Bulent playgrounds enable children to observe people walk by which helps develop awareness of the children.

The lakes, fountain, artwork and statues offer the surroundings with a pleasant view and healthy air which enhances the child's play and psychological well-being which is being

investigated in Botanic Nature Park. Variety of elevated levels increase the diversity of kids play which is noticed in Zorlu Park.

There is acceptable level of connectivity in the design of the playgrounds, no change in the zones in most of them (one space), no chance for using loose parts, no clarity (according to children scale) and the challenge level is acceptable in all playgrounds. Although the Botanik arena encourages and allows most types of play, there is not enough and diverse equipment inside the natural area. It is only an open area and is not designed, no water supply area.

According to the findings, the areas were mostly designed around set play equipment, which favored physical growth over social, imaginative, and fine-motor growth. While other locations scored lower for sensations since they lacked elements that promoted the senses, locations with more organic elements were listed higher for sensory interactions that included loose and natural objects.

Fantasy play, also known as creative, pretending, dramatic, fantasy, or imaginary games, shows how the elements of playground construction and innovation are related. According to the findings. Based on the observations, play spaces in Istanbul are inadequate to meet the needs of children aged 0-3. The main reason to this is that equipment are not age appropriate and not designed considering young children's developmental skills, abilities and inabilities.

The second finding is that the play spaces do not have sufficient variety and number of equipment and the play facilities exclude the essential play types and characteristics.

For instance, most of the play spaces do not allow children to experience construction play, dramatic play, discovery play and existing play facilities do not encourage children to think critically.

Lastly, there is limited regulations or legislations about play space design in Istanbul. Thus, in the creation of play spaces, environmental characteristics are ignored, there is no overarching, cohesive theme connecting the playground's components, location of play areas varies a lot in Istanbul. It may be on the coastline, in a neighbourhood, business district, a larger public park or a busy street of the city. However, most of the time, the differences that can be caused by environmental factors are ignored and standard traditional play equipment consisting of slide, swing and seesaw are built in a park in Istanbul. The findings of this

study demonstrate the capacity of natural and designed and play features to enhance children's social and cognitive skills.

It can be concluded that the possibilities for functional play were found in all playgrounds, there are chances for, running, riding bikes, slipping, swaying and these activities enhance the Gross Motor Skills, which support the development of foot-to-eye and eye-to-hand collaboration ,perception of location, providing a source of deep brain stimulation information, Strengthen the muscles by climbing and running, swinging Increases heart rate and burns calories, Turning aids in the growth of power, equilibrium, kinesthetic awareness, and sensory stimulation in autistic kids.

sliding enhances the perception of location, learning the flexibility and losing control of the body, thus the equipments are sufficient to encourage children physical development.

The possibilities for constructive play were found in one site and in a limited way, by providing sand area and its equipments of digging, lifting and mixing. This type of play can be supplied by providing many types of loose parts such as sticks, clay, Legos, blocks, water area, gravels which can be used for constructions and building, these activities enhance the imagination, creativity, making decisions, thinking mathematically, rational thinking based on science, solving challenges so the equipments are insufficient to encourage children cognitive development.

Also self-focused play found in 3 playgrounds, since all of them offer a good view in the grass and nature to stand or sit and observe the site or the others while they are playing but not participating themselves. High-height equipment can encourage this type by allowing children to sit on top of them. Meditating in nature and trees, and running long distances in nature alone since there is feeling of safety in the park.

Some of the abilities that they acquire involve how to better control their feelings. Additionally, this is a great way for quiet and reserved kids to pick up social skills and manners from other kids without having to interact with them directly. They can advance to the next level of play by learning at their own speed and developing the confidence in themselves. Observing other children engaging may enhance a child's concentration, awareness, and memories as they observe. They also pick up new vocabulary and sophisticated behaviors like hand gestures. thus the design of the playgrounds is sufficient to encourage children emotional development and sense of place.

Opportunities for symbolic play was confined to the natural site(Botanik) and the large paved area site (Bulent) and to the most diverse equipment site(Zorlu), when children play and run together in the walls area, but there is no enough space for interacting together ,this type of play enhances the social relationships by interacting with other children, Children use their imaginations to convey their emotions and psychological requirements during pretend play, which helps them become more creative and able to think outside the box. thus the design of the playgrounds is sufficient to encourage children social development but lacks equipments that could be designed to encourages this type of play such as mases or tree homes.

The possibility for solitary play was found in the sand area which located in Zorlu and Botanik playground, the playgrounds lacks spaces for children only to gather or stay alone without observation, through this type of play, children can freely investigate, learn new abilities such as motor or mental abilities, and get ready to interact with other kids.

thus the design of the playgrounds is insufficient to encourage children independency.

The opportunities for discovery play were limited to the natural site (Botanic), as it includes flowers, large areas of grass, and differentiation in levels. Through this type, the child can build a greater sense of himself. Activities that encourage this type of play are lifting rocks, climbing trees, pulling apart leaves or stems, picking flowers, following ant trails, and examining insects. Playgrounds design is inadequate to encourage testing, reasoning, creative thinking, negotiation, and the development of emotional freedom and sense of self through exploratory type play.

In conclusion, due to the availability of different types of equipment, spaces design diversity and the location of the playground, the types of play have increased and varied, and this subsequently affects the mental, psychological, societal and physical development, sense of place of children and their relationship with parents, because each of these types stimulates certain growth capabilities in children, according to field research outcomes, most of outdoor play spaces in Istanbul are generally designed with limited consideration for the needs of young children.

Thus, this thesis discovers that the design of the playgrounds affects and determines the child's development in a direct way and it is intended to encourage designers, landscapers

and child care specialists to integrate the investigated typologies of urban and play features in Istanbul play environments.

a. Suggestions for designing playgrounds

According to field research results, play spaces in Istanbul mostly lack the diversity of play activities. Some of the play types like scientific play and language play are not seen in any of the observed areas. Absence of product designers working on playground and play equipment design and the use of standard modular playground equipment in most parks is one the most important reasons of this problem. Play spaces should be designed with the knowledge of play types and their contributions to the development of different age groups. Therefore, this thesis presents some suggestions for designing playgrounds in a way that offers all types of play that affect children's development.

Children of today should have creative play areas that are customized to their requirements. Play supplies should be built to provide opportunities for choices and to encourage independent thinking.

They might have been utilized to enhance children's exploration play and create tree dwellings and scaling structures. It was affordable to facilitate younger children's play using tunnels.

There must be consideration for natural landforms and changes in level which add an interest to the site and stimulate a variety of play activities, such as rolling, crawling, sliding, balancing and Jumping—activities that stimulate the vestibular sense. supplying loose parts such as sticks, blocks, leaves, gravels which enhance the imagination and problem solving skills of the children. Sand areas that allow the use of water for mixing and manipulation. Topographic variety should encourage fantasy play, orientation skills and hide-and-seek games. Spaces should allow children to be alone.

Physical elements that enclose zones and contribute to the fluidity among zones are objects such as low walls, stumps which can be climbed over, plant material, which can allow children to pass through its walls or water supply area.

b. Recommendations and Suggestions for Further Research

In order to carry this research forward, it is necessary to increase and improve the components of the play environments.

If the research takes place over a wider period, more data can be collected and this limitation can be avoided. Further research on this topic could also involve inclusive design and ecological approach, which is leading a designer to a new, larger in sight of human centred design, more research is needed to conduct a more in depth study on the effects of outdoor space on a specific developmental health category.



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APPENDIX A

OBSERVATION PAPER SAMPLE

Date: 10/03/2024.....

Hour: 17:25.....

Point A: Examining the Children's Play Behaviour

The child play: a. Alone

b. With his\her friends #

c. With parent\.....

Point B: The child's play type is:

a. onlooker

b. solitary

c. Construction

d. Physical

e. Symbolic

F. Discovery