PLAY IN AN UNDESIGNED URBAN SPACE: NISANTEPE, INSTANBUL

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ABSTRACT

In Nisantepe, which is one of the informal settlement areas in Istanbul, it is noticed that the immediate surroundings of the houses, even the streets and sidewalks are transformed into play areas where children freely play with their peers. Although this condition seems to be an advantage for the child, the lack of supervision of parents and adults, the diversity of spatial heterogeneity that dominates the urban fabric and the insecurity of the urban morphology makes the child vulnerable to dangers. In this context, the morphological structure of Nişantepe region is analyzed by using space syntax method. The safety characteristic of the region is analyzed by revealing connectivity, integration, and mean depth values. Due to the fact that the connectivity value of the route between the two existing playgrounds in the region and the school gradually decreases to the west direction, urban strategies have been proposed not only to increase the connectivity value of the school route, but also to increase the mean integration value of the district. The results may contribute to acquiring a child-friendly environment database that sheds light on how built environments of children can be designed safely in order to improve children's competence and skill levels. Keywords: children, informal settlements, play, space syntax, urban morphology.

INTRODUCTION

The child is a sophisticated being that goes through various distinctive periods of physical, social, emotional and cognitive development at different age periods that allow the child to acquire various skills individually. Meanwhile, the various places where the child is together with both his peers and adults contribute to their social and emotional development. Thus, the effectiveness of both the child's own internal dynamics and the environmental and social and physical dynamics require that the spaces where children are included are equipped in an ergonomic and pedagogical context.

The formation of such qualified and inclusive play environments depends on the fact that children of all age groups contain features that support their play. The environmental support required for this type of play environment is closely related to the fact that well-defined spaces that sometimes provide opportunities for individual play and sometimes provide access and opportunities for children with various abilities, interests and needs. Play environments, which are designed to meet the developmental, sensorial, motional, behavioral, social and emotional needs of each child, both enriches the play opportunities of children and has the potential to expand these opportunities. (Doctoroff, 2001).

BACKGROUND

Play is a concept equivalent to breathing for the child. The act of playing for little children is an inborn phenomenon. Experiences gained through seeing, smelling, moving, touching and tasting form the basis for the child to acquire knowledge about the world and space in which he/she is involved. (Mittledorf et al., 2001). Piaget (1962) states that the child continues play not because of such a conscious choice, but because he/she enjoys it. Because play is a way of interacting with the child's environment.

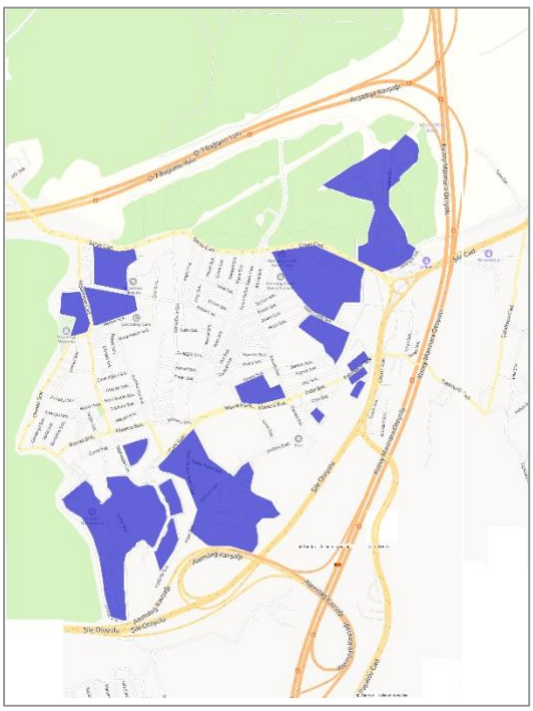
Theemes (1999) tries to summarize both the positively engaging, rewarding, creative, and liberating effect of play on the child with a classification of the basic features of play:

1. Play is enjoyable and satisfying.
2. Play is a process in which the child is self-directed and free.
3. Play is a rewarding process for the child.
4. Play is challenging, active, and engaging for the child.
5. Play is creative and many objects that are ordinary for adults can contain exciting meanings for children.

Children start playing when they come together, when they see their peers playing, when they go out to play, or whenever they are not sure whether they will be playing (Gehl, 2011). According to a series of studies investigating children's play habits in Copenhagen (Gehl, 2011), it is shown that children prefer to play in areas where daily activities take place most. Jacobs (1961) also states that sidewalks are safe playgrounds for children that naturally occur in cities because sidewalks contain various commercial areas on the street and human circulation formed under natural conditions. Therefore, sidewalks have a kind of spatiality where sufficient surveillance is provided and, in Jacobs's words, 'eyes upon the street' are active. Additionally, Newman's theory of Defensible Space (1995) states that cul-de-sac is more preferred by families with children, where traffic is limited, and the relationship of neighbors is strengthened and protective eyes on children increase and the street entrance is singular.

According to Garbarino, play is not only a result of the child's physical, social and cognitive development, but also a result of social groups to which the child belongs and the environment in which these groups live (Michelson, 1987). Children learn the values adopted by the society they live through these interactions (Taylor et al., 1998). Therefore, play behavior that emerges as a result of these interactions is a result and product of both the physical environment in which the child is growing and the individuals who take part in this physical environment. In this context, when urban history of Istanbul is examined, it is well-known that some parts of the city were designed in line with the urban plans prepared by the governmental decisions while some are not designed in accordance with any plan, so individuals make their spatial production informally due to the inevitable social and economic dynamics occurring in some periods (Tas and Lightfoot, 2005; Dicle, 1983). These kinds of settlements, which are constructed by individuals with their own initiatives without a license, are referred to as “informal settlements” within the scope of this study.

In the districts where Istanbul was built informally as of the 60s, many children still play on the streets. In such districts, it is observed that children still play ball and hopscotch on the streets and freely play in apartment porches. However, in such districts where playground design is rarely found, it is not possible to mention that parental control over children is very strict (Ayata and Ayata, 1996). Considering the population of children living in such regions, it is seen that the number of informally constructed playground equipment is low. In this study, the informal environment of this kind, which is mostly devoid of parental or adult supervision, is referred to as 'undesigned play environments'.



The region analyzed in the study is Nişantepe Neighborhood of Çekmeköy district, (Özorhon ve Özorhon, 2017) which is an informal settlement that has grown unplanned on the Anatolian side of Istanbul. The average household size is 5.22 people. The district is surrounded by forests where approximately 10,000 people live (Url-1) mainly from disadvantaged groups. In addition to the industrial and logistics facilities, especially in 2010, public housing was built by the state, private educational buildings were established. Thus, the region started to be known as “education valley” and gradually became a district with increasing plot value which caused significant changes in parcel sizes (Figure 1).

Figure 1. Gated communities, public housing communities and educational buildings which occupy a large area in the region.

Non-systematic observations were conducted (Url-2) on different days and hours in order to understand whether children prefer certain places. Additionally,

the location of two playgrounds and sports grounds has been found out and the play behavior has been observed. During these observations, it was observed that the children played in the entrances, porches and streets in front of their houses, regardless of their age and predominantly without parental supervision. Although children, who live on the streets which are located near parks, prefer to play in parks, the game is not an obstacle of the city for children who live in a more remote location of these parks.

Because all children living in the region can play in their gardens when they wish, on the sidewalks nearby and even on the roads because the traffic is less in this region when it is compared to other parts of Istanbul. Almost everything that children find from around, such as construction residues, sewer pipes, puddles, stones and sticks, geese and chickens they feed, constitutes their play materials. Although there are two children's playgrounds with fixed play equipment in Nişantepe, it has been observed that many of the children prefer the random play potential offered by the streets and sidewalks (Figure 2).

With this context, in the neighborhood of Nisantepe children seem to have the opportunity to closely observe and explore the natural cycle of the daily life compared to children who spend most of their time in urban lands. However, they are open to various dangers, as Jacobs (1961) speaks of, lacking the natural control of a city formed by the combination of natural conditions and the eyes upon the streets. The prominent research questions at this point are listed as follows:

1. Nişantepe Neighborhood, which has the potential to play almost at every point, is a safe playground for the child?
2. Does this environment, in which sometimes older sisters and brothers 'take care' of their younger siblings, without parent supervision, contribute to the social, emotional and physical development of the child?
3. How can this environment be improved in terms of their safety and development for children, who are always ready to play?

Based on Jacob's concept of 'eyes on the street' (1961), her proposal that safety of the child on the street can only be realized by being a part of everyday life, Gehl's discussion (2011) regarding the importance of public space between buildings, and Hillier's sentence "Good space is used space" (2007); the hypothesis of this study is based on the proposition that the region's walkability value should be increased.

By increasing the value of walkability, it is thought that play environments will be turned into a safer and much more beneficial environment for their development. Therefore, the axial graph of the region was prepared by space syntax method. It is aimed to produce urban strategies that will increase the connectivity value of the region and decrease the mean depth value.

Figure 1. Children playing in front of doors, sidewalks and streets in Nişantepe Neighborhood (photos: Çanakçıoğlu, 2019).

METHODOLOGY

For urban strategies that can be developed in order to increase the walkability value of the region, firstly, an axial analysis of the region's morphological pattern was made and the accessibility map of the region was generated. The urban mobility potential of the region was explored with the connectivity, integration

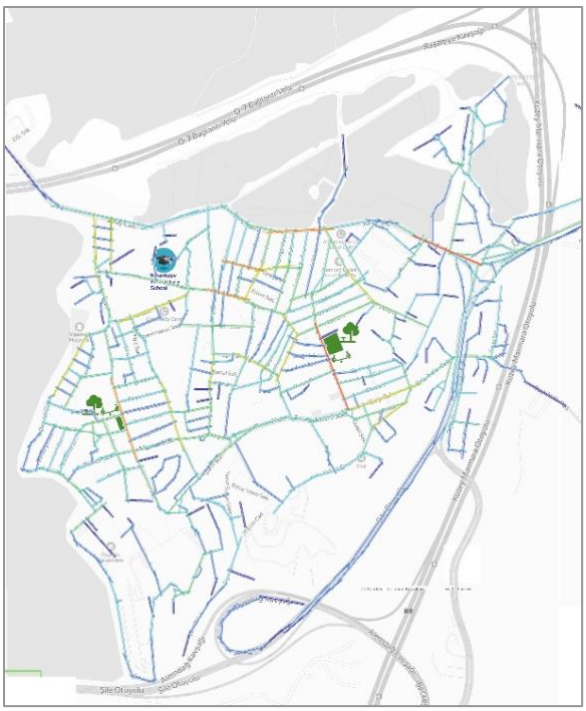
and depth values. Axial analysis of Nisantepe region was performed with Depthmap (Url-3) software. Connectivity, global integration (n), mean depth values were revealed.

According to the space syntax theory, depth and integration values are opposite to each other. While the most integrated street of a particular urban area is the street that can be reached quickly with the fewest options, the deepest street of this urban area is the most segregated street that is reached as a result of the greatest number of changes from other streets (Hillier and Hanson, 1984). The longest and linear street of an urban plan is also the most preferred street, as the user has the highest view angle. Such streets with high integration value are observed to be the streets that combine more than one function such as residential, commercial and service areas. Another syntactic measurement of any urban fabric is the connectivity value. Hillier and Hanson (1984, pp.103) define the connectivity parameter as “Connectivity measures the number of spaces immediately connecting a space of origin”.

FINDINGS

Axial graphic of Nişantepe Neighborhood has been created and the graphs about the global integration (n), connectivity, mean depth values have been presented and minimum, maximum and average figures of these values are shown (Figure 4).

Figure 3 shows a superposed version of the connectivity graph with the street pattern showing two existing playgrounds and the school. According to this map, the street where the playground on the east is located at has the highest connectivity value which is 11 (Figure 4). And the other street where the playground on the west is located at again has a high connectivity value of 10 (Figure 4). As for the Nişantepe Elementary and Secondary School, it is located on a street which has a connectivity value of 5. However, a street with a connectivity value of 9, is correlated with the road the school is reached up (Figure 4).



Regarding the texture between these three fields, it is the part where the residence texture is concentrated at and it is clearly noticeable that creating a school route with a high homogeneous connectivity value between these three urban equipment, is beneficial for the increase of the walkability value of the district.

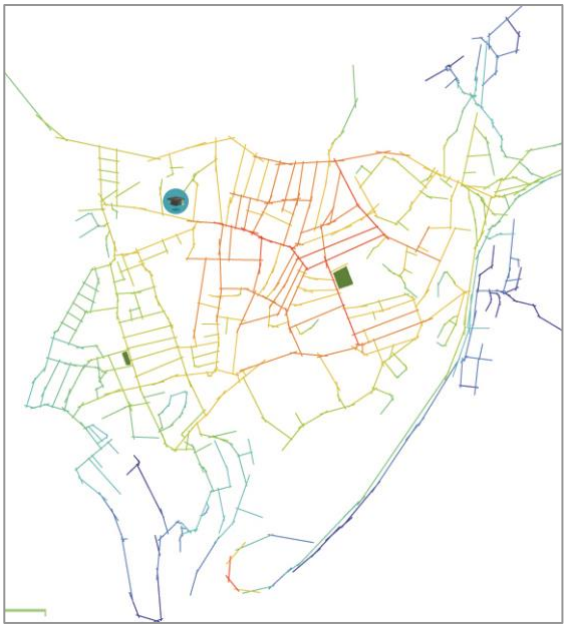
Figure 3. a superposed version of the connectivity graph with the street pattern showing the existing playgrounds and school.

Figure 4. Minimum, average and maximum values of syntactic attributes of Nisantepe district.

Syntactic Attribute no.	*Attribute*	*Minimum*	*Average*	*Maximum*
1	*Connectivity*	*1*	*2.86159*	*11*
2	*Integration (n)*	*0.261215*	*0.518764*	*0.766192*
3	*Mean Depth*	*2.28571*	*14.4106*	*26.2214*

When the integration graph of the district is examined (Figure 5), it is noticed that especially the integration value between the playground and the school which are on the east side is high, and as for the playground on the west, this value is gradually dropping. It is understood that some of the streets are dead ends, private school premises with large plots are cutting back on the street pattern creating sharp contrasts both in integration and connectivity values.

The residential pattern on west, it is noticed that the depth has the biggest value. Increasing the connection value of the street texture of this part which is located in the east and which can be defined as the most segregated part of the Nişantepe Neighborhood, with the streets in the west; can play a role in increasing the average integration value of the district.



With the increase of the average integration value in the region and the formation of a more homogeneous connectivity between the two parks and school; it is possible to create a pedestrian and bicycle friendly, unobstructed, nature and play-friendly main route that can be used safely and comfortably by not only children and parents, but also residents of all ages and genders.

It could be useful to varying the land use functions on this route as it will increase the public interaction and presenting proposals which might contribute to the random playing potentials of children in purpose of increasing the walkability between the playground and the school.

Figure 5. Integration graph

CONCLUSIONS

This study searches the potential of creating a safer and more child-friendly play environment through Nisantepe's existing urban morphology without restricting the freedom of the children of Nişantepe.

The people of Nişantepe, and especially children, who are trapped between new housing projects which belong to large capital groups, large and non-permeable areas covered by production facilities, and private educational institutions, deserve a more 'child-friendly' urban environment. Functional enrichment of the building use potentials and urban spaces on the school route can increase the walkability potential of this route by contributing to the social and cultural development as well as the economic development of the people. In order to increase these potentials, four urban strategies are proposed within the scope of the study.

1. Existing open sport areas and urban equipment can be redesigned according to inclusive design principles.
2. For Nişantepe children who have the freedom to play on the street to gain more joy and benefit from their play, new playing equipment ideas can be presented where they can especially run across on the school route, which are open for improvised game, with unknown limits, and infinite playing possibilities; instead of structured playgrounds.
3. Some of the plots on the school route can be arranged as community center, children's library, kindergarten, literacy and vocational course and social service buildings in order to increase the social solidarity of the district and contribute to the cultural development.
4. For the purpose of contributing to the economic development of the district, the areas where the connectivity value is low can be functionalized mixing the uses of residence, social service and commercial. Open, closed and semi-open built environment where social and economic activities which are concordant with the local community's unique life experiences, can cause not only an increase on the local community's income but at the same time an increase on the urban interactions and social solidarity of the district.

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