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A Pilot Study: The Impact of Outdoor Play Spaces on Kindergarten Children

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Abstract

Playing and moving are essential to the young children's lives. Allowing the children to experience the natural and man-made elements in their living environment would generate cognitive, physical, and social skills development. This study investigates the physical performances of playing in outdoor play spaces of kindergarten children. The outdoor play spaces of Tadika Islam Taman Tun Dr. Ismail, Kuala Lumpur was evaluated to identify the landscape features on the playground that affords stimulating play environments for children. The study approach includes interviews, observations and behavior mapping guided by the theory of affordances employed. The findings indicate that landscape features influence children physical activity.

Keywords: Children; outdoor play; playgrounds; children and environment

1. Introduction

The natural environment has conventionally been a site for play and physical activities for many children. Nowadays, however, modern societies seem to have neglected the value of such environments for the development of children and adolescents. Children now spend far more time being taught and

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tested on literacy and math skills than they do learning through play and exploration, exercising their bodies, and using their imaginations. In young children's lives, playing and moving are very important and they associate with one another. Allowing the children to experience the natural and man-made elements in their living environments would generate cognitive, social, and physical skills developments. According to Moore and Wong (1997), play in outdoor environments stimulates all aspects of children's development more readily than indoor environments. Moore (1986) also claims that children who play in nature have more positive feelings about each other.

Theories point out that concern for the environment is based on an affection that can come only from autonomous, unmediated contact with it. The environment is a resource for imaginative and cooperative play and it provides the props and stages. For example, Moore (1989) claimed that the richness of physical elements in the settings and their relationship to each other should arouse curiosity and trigger imaginative associations. In addition, Yerkes (1982) found that toddlers who play in a creative adventure playground showed increase in visual motor integration as well as verbal and social skills, assertiveness and imagination. Such playgrounds made by utilizing the forms, textures, and heights as well as manipulative materials such as cardboard boxes, toys, sand and water eventually encourage them to perceive their benefits or adversities. Mobility and perception in the landscape stimulate the children's senses and generate feedbacks as well as affordances. Through movement, children perceive the landscape through three modes of learning which are cognitive, affective, and evaluative (Said, 2005). Furthermore, Olds (1989) pointed out that playing with landscape elements (natural and man-made) and climatic factors stimulate their senses, leading to cognitive development. The information gathered from the stimulation is interpreted and applied as a concept or idea, suggesting that the landscape elements provide benefits or adversities.

Early childhood is the most critical period of a child's development. The child's physical as well as social-emotional and cognitive development takes place speedily during this formative period, with more intense critical transitions. In fact, the exposures to the outdoor environments encourage the intellectual growth and cognitive learning which is also linked to the wider experience. Therefore, the environmental learning through play needs to be brought into the lives of all children together with the principles and practices of local communities.

This study looks into the impact of playing in outdoor play spaces on physical or motor activities of kindergarten children. The paper presents a pilot case study of a selected kindergarten.

1.1. Aim and Objectives

The research aim is to identify the landscape features (natural and man-made) in outdoor play areas that afford challenging and stimulating play environments for kindergarten children. The researcher evaluated the play activities of children during their playtime in accordance with the theory of affordances (Gibson, 1979).

1.2. Methodology

This study presents a pilot case study carried out employing a number of integrated methods such as interviews, observations and behaviour mapping. Furthermore, the researcher used participatory technique in carrying out these research activities with the children. The idea has been used by Burke (2009), in her research work entitled '*My view of the playground: a participatory photographic project'*. However, in the presented case study, children were asked to do the drawings by themselves instead of taking photos.

This approach explores and describes the situation or experiences of people with the environment (Seamon, 2000). That is, it seeks to grasp and clarify the meaning, structure and essence of the life experience of a phenomenon for a person or group of people (Patton, 2002). In children's play settings, it seeks the experience of a child in his situated action (Greig and Taylor, 1999) constructed by him in a context. The context is a physical space, which is shaped by the presence of children, so are children shaped by it (Graue and Walsh, 1995). The approach operates by eliciting the children's behavioural responses experiencing the physical landscape through play and movement particularly in social play (Graue and Walsh, 1995; Moore and Young, 1978; Olds, 1989).

The theory of affordances was engaged into these methods, in order to find out how outdoor play environments contribute to childhood progressive behaviour and encourages motor skill development of kindergarten children through play experiences.

The experimental study was carried out among children between four to six years old in kindergarten at Taman Tun Dr. Ismail, Kuala Lumpur. The school has a wide play area consisting of a playground with the play structures and equipments, an open space with asphalt in front of the main building, and a covered area with a stage attach to the school building. There are seventy children in the morning session that use the outdoor play area and twenty four in the afternoon session. To obtain a better insight, the researcher observed the children in the morning session as there are four to six years old children in this session while in the afternoon session; there are only children in age group of five and six. Almost all of the children use the outdoor play spaces at the same time during half an hour of their break time every day. The children were selected randomly by the teacher to be involved in the observation. Seventeen children were selected consisting of the range of age from four to six years.

1.3. Findings

1.3.1. The Study Area

The site of the investigation is a small area of kindergarten in Taman Tun Dr. Ismail, Kuala Lumpur. The landscape pattern shows a combination of some open spaces of tarmac and playground with turf. The topography is a flat with variety of vegetation (Fig.1). This allows the children to play diversely and affords a number of play habitats (Fjortoft and Sageie, 2000). Children are allowed to go at will during play time and the teachers only supervise the children from distance.

1.3.2. Play Habitats

The children use some favourite places more frequently than other in the kindergarten area. This play habitat is located close to the school building and it represents specific play activities such as social play (Fig.2 and 3). The desired area is shaded by big trees and the surface is a combination of turf and sand. There are also a few benches under the trees and single log lying across the benches that provides them an exploratory play habitat as well as social play in the kindergarten area. The varieties of landscape elements (natural and man-made) in the play habitat offer multiplicity of choices for their activities. To illustrate this, the children tended to climb up the benches or the log and jump during the observation. They also did this by taking turns. Some of them were walking on the log using their imaginative play and acted as if they are passing through a bridge. The benches and the log afford social play. The shaded trees also afford shelter and hiding, social play and construction play. Some trees are suitable for climbing depending on the branching pattern, the stem diameter and the flexibility of the tree.

Fig. 1. The landscape pattern of the kindergarten. Source: Author (2010)

Fig. 2 and 3. The play habitat that represents specific play activities. Source: Author (2010)

Since the area is their play habitat, it clearly showed that the turf is almost worn out due to their activities. The sand gives the children more opportunity to play as well, and affords digging and social play. The other favourite places for the children are the open areas and the playground area. The areas are joined together between playground, asphalt area and covered open hall that were located in front of the main school building. It can be seen during the observation that the children preferred to run and chase after each other while playing. The open area affords running and chasing as well as social play (Fig. 4).

Fig. 4. The open areas as their play habitat. Source: Author (2010)

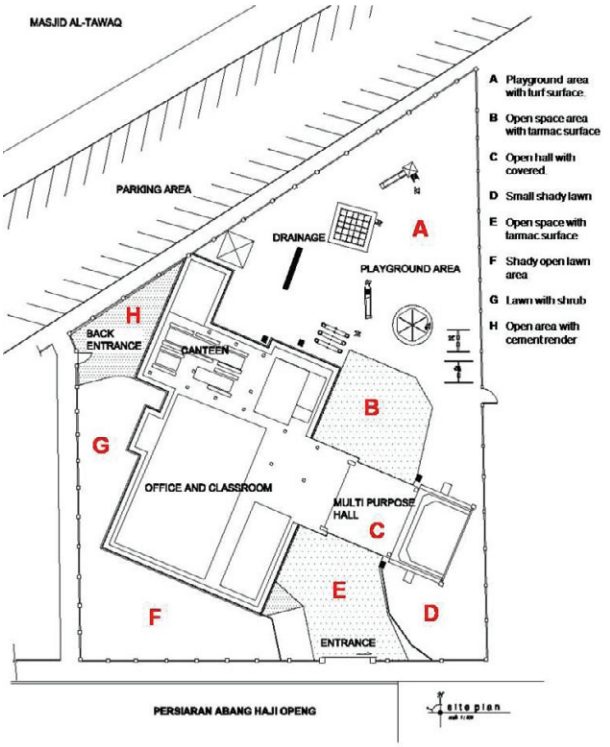

Fig. 5. The layout plan of the kindergarten shows the spatial distribution of play habitats. Source: Author (2010)

To illustrate the play habitat zone, the researcher presents a layout plan of the site (Figure 5). The layout of the kindergarten limits the exploitation of the spaces as a whole. This is due to the site planning in the early stages of the building set up. The building of the kindergarten was formerly an unoccupied mosque and it has been converted into a kindergarten. This is the reason why the layout of the building is northeast orientated.

The layout was indicated based on spatial distribution. It includes a playground area, open space areas, covered open hall, and several small lawns. The backyard entrance is accessible to the road and car park, and therefore it becomes a preferable way in. In a view of children movement in experiencing the environment, Gibson and Pick (2002) classify two types of information pickup: exploratory and performatory. In this study, researchers measured the performance of children through their physical action. From the observations, it was clearly showed that zone F is the most preferred place of the children followed by zone A and C. These places provide qualities of affordances that encourage children to stay and do various types of play activities. For instance, zone F is sheltered by matured trees that offers shade for children, the trees itself afford activities such as hiding and climbing. Moreover, there are a few benches that allowed children to sit and have social play activities.

1.3.3. Motor Skill Ability

17 children (11 boys, 6 girls) were randomly chosen by the teacher and they were observed during the recess time. During the session, the children's motor ability was observed and measured through their play activities guided by theory of affordances (Gibson, 1979). According to Gibson (1979), affordances refer to the functionally significant properties of the environment provided a psychologically relevant

concept for the analysis of the evolving child-environment relationship. In this case, the children become outstandingly active at their natural play areas which associate to the natural landscape element such as trees, stones, sand, turf, shrub, and many more.

Table 1. Environmental Qualities that support Children's Affordance

Landscape character		Play activities/Affordances									
Environment Qualities	Occurrences	Walking	Running	Jumping	Climbing	Sliding	Catching	Plucking	Hiding	Sitting	Sociality
Flat surface	Pathway, lawn, playground open hall etc.	10	11	5	14	16	4	0	3	6	15
Smooth/rough surface	Slope, asphalt, pave area etc.	5	4	3	0	0	0	0	0	0	3
Graspable/detached objects	Animals: butterflies, bugs etc Plants: shrubs, moss, climbers etc.	0	1	0	0	0	2	3	2	0	3
Attached objects	Textured wall, boulders, bollard, wood edge etc.	0	0	3	4	0	0	0	2	5	4
Non-rigid, attached objects	Musical instrument; pipes, artworks etc.	0	0	0	0	0	0	0	0	0	0
Climbable features	Log, balance beam, rock sculpture etc.	15	0	7	9	4	0	0	0	9	8
Shelter	Open hall, stage, open space	9	8	5	4	3	0	0	0	7	9
Mouldable materials	Sand, chipping etc	5	0	0	0	0	0	0	0	0	5
Microclimate	Rain, sun, wind etc.	4	2	0	0	0	0	0	0	0	0
Sum		48	26	23	31	23	6	3	7	27	47

As compared to the play activities in the playground area, the natural landscape element provides diversity in play. This is supported by frequency of the children and the duration they spent in utilizing their favourite places. Furthermore, the desired place encourages children to socialize, as well (Figure 6).

Fig. 6. The desired place encourages children to socialize and play a range of play activities. Source: Author (2010)

2. Discussion

In this study, the researcher found that a diverse landscape element has the qualities to meet the children's need for varieties and stimulating play environment. The study describes the relationship between the structures and functions of a natural landscape element, its affordances for play, and the impact on physical activities in kindergarten children. The investigation was made on the kindergarten children (n=17) in the range age of four to six years through their free play activities in the kindergarten. The landscape pattern showed a combination of varieties of open spaces that offers different landscape feature and surface. These allow children to engage with multiple play activities such as social as well as constructive play.

In the interpretation of landscape features for playscape of children, the researcher has focused on the affordances of the landscape (natural and man-made) for play. The children perceived the functions of the landscape and used it (Gibsons, 1979). They selected the habitats or spaces that afford them to play. This was the observed behavioural response of the children to the environment (Fjortoft, 2000).

Nicholson (1971) argued that there is evidence that all children love to interact with physical environmental features, such as materials and shapes, gravity, smell, and other things, which they can discover, explore, and experiment with. In this case, the children regularly used zone F as their favourite place in the school area (Figure 5) despite having a playground in zone A. The zone F becomes their play habitat because the area is shaded by matured trees and the surface is filled by turf and a little bit sandy. The benches located under the trees and the log near the area also provide an exploratory and social play for the children. As compared to the playground area, that has a wider space with various types of features but yet could not afford exploratory play activities for the children. Hart (1997) verified that in child's perspective, place knowledge undoubtedly plays a part in the guidance of action, and meanings of things in the environment arise out of social interaction with other persons.

The physical patterns of habitat complexity or diversity include its structure, composition and function (Skanes 1997). Diversity in the landscape (i.e., diversity in topography and vegetation) was related to children's play behaviour and its effect on their motor fitness (Fjortoft, 2004). In looking at the children's movement in experiencing the environment, researcher measured the performance of children through

their physical action during play activities. The children love to explore on new things that challenge their movement. For instance, they know that they could climb and slide on the playground, but instead they preferred to challenge themselves using the log and the benches for climbing, hopping on and off. These features allow children to do the same activities yet in the exploratory way. In addition, the place is sheltered by mature trees which offer shade for children, and provide a natural landscape for activities such as hiding and climbing.

A significant relation between the diversity of the landscape and the affordance of play was indicated (Fjørtoft & Sageie, 2000). As described by Gibson (1979), the affordances of a landscape are what it offers to the child. As the child perceives the functions of a landscape and uses it for play, the landscape might have a functional impact on children's behaviour and play performance. As maintained by Moore and Wong (1997) the physical diversity increases the opportunities for learning and development. The study of Titman (1994) also confirms the children's needs for green grounds, trees to climb and shrubs for shelter and building of constructions. A natural landscape is synonymous with an enriched environment, which again stimulates and promotes play and learning (Rivkin, 1995).

3. Conclusion

This study indicates the relationship between versatile play in the play habitat in school area and the impact on physical activities in children. These are competencies of great importance to the children's general mastering of their own body in relation to the physical environment. There is a strong relation between the landscape features and the functions of play through exploratory play. The natural environment is a valuable source for diverse learning and diverse play habitats for children.

However, in Malaysia context, most of kindergartens and preschool do not take this issue as crucial thing to be measured prior to setting up the school. Most of the kindergarten layouts and arrangements have often separated the spaces for different purposes. This has the tendency to limit their sense of wonder and opportunities to play. Moreover, children were often controlled by time to play. Experiencing the landscape is a phenomenal process that happens among children participating in activities dealing with natural and manmade elements which contribute to their cognitive, affective and evaluative maturation and development. For that reason, natural environments must be adapted to meet these needs in order to facilitate children's assimilation of knowledge about the complex ecological relationships in various contexts of where they live.

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