AFFORDANCES OF ORCHARD AND FOREST AS PLAYSCAPE FOR YOUNG CHILDREN IN MALAYSIA

Landscape features-trees
Direct and indirect experience of nature-observe animals
Physical competence

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INTRODUCTION

Studies by (Sebba, 1991; Faber Taylor et al., 1998, Chawla and Heft, 2002; Khan, 2002; Kellert, 2002; Louv, 2006) showed that children contact with natural environment effect physical, social and cognitive development.

The natural environment provided spaces for children play (Fjortoft, 2004), to interact with each other (Kytta, 2003), to set boundaries and to feel sense of control (Olds, 1989), and to understand the outer world (Faber Taylor et al., 1998; Sebba, 1991). Hammitt (2000), Sobel (1999; 2002), Rivkin (2000). Gleeeson and Sipe (2006) note that experiencing the forest affords people to get away from everyday places and to get privacy.

The forest as a playscape for children offers play activities that are climbing rocks and trees, running and tumbling and sliding slopes (Fjortoft, 2004). Hence, develop positive attitudes to the wilderness (Borge et al., 2003).

This research explores on the functioning of children with the elements of forest and orchard. It examines the physical, cognitive and social interactions of middle childhood children experiencing the settings.

The objectives of the research were:

1. To study children’s functioning and process of participation in forest and orchard towards learning and knowledge development in outdoor environment; and

2. To investigate environmental knowledge and awareness of middle childhood children on the two settings.
**DEFINITION OF CONCEPT**

- *Forest* is a natural and dense jungle located far from a rural community which is composed of a variety of tall tropical trees and undergrowth (Figure 1). - a place for the locals to gather wild fruits, firewood, rattan and medicinal produces.

- *Orchard* is defined as a cultivated fruit farms composed of tropical fruit trees and generally located in or near to rural settlement (Figure 2).

- *Play activities* are classified according to into categories of functional play, construction play and symbol play (Frost, 1992). These are play forms that enhance physical activity and gross motor movements (Fjortoft, 2004).

- *Playscape* is defined by Frost (1992) as a landscape that affords children to ability to play.

- *Performances* are defined by Chawla and Heft (2002) as children’s functioning which are categorized into performatory, exploratory and productive activities (p. 206).
Performatory activities are those actions directed toward some objects or other individual. The individual is making use of already known properties of environmental features that are available.

Exploratory activities are actions directed toward discovering new properties. The individual is seeking to uncover new functional properties that may be latent in the surroundings.

Productive activities are those actions transform the environment features, and having particular functional properties being created” (Chawla and Heft, 2002 p.206). In a forest park,-

a performatory activity is picking wild seeds from the ground, and an exploratory activity is searching for edible fruits (Figure 3) such *Lansium aqueum* (Langsat) and a productive activity is cutting treelet stems and tying them using a string to make a pole to harvest the fruits.
The study was carried out with middle childhood children from an orphanage in Perak, Malaysia, using a phenomenological approach. The orphanage was located in a small town, Chemor, 80 kilometers from the study site. Eighteen boys, aged 5 to 12, were brought to the site by the caregivers of the orphanage.

The Site

A virgin forest and a composite of orchards located on a hilly landform in Kampong Cheh, Perak, approximately 550 meters above sea level. The orchards were composed of matured fruit trees including durian, rambutan, garcinias and parkia planted by villagers of Kampong Cheh. Orchard are mixed with semi-forest that some of the trees reaching 40 meters high with large boles and wide buttresses.

The Method

The data of children’s activities were interpreted using Denzin (2001) interpretative process and involve with bracketing the children’s behavioral responses into two categories, orchard and at forest. At the orchard, the responses were further categorized into three types: (1) activities at stream, (2) hiking in orchard, and (3) resting on hilltop. In the forest, there was only one category, which is, hiking and resting. The responses were considered as affordances which were later bracketed into two categories: (1) levels of affordances, and (2) taxonomy of affordances (Heft, 1999; Kytta, 2003). The second step of the process is explanation on the levels of affordances and taxonomy of affordances put back the children’s phenomena into their functioning (performances) and their knowledge on the outdoor environments.
1. Levels of Affordances

The performances of the children were categorized in three levels of affordances: utilized (n=38), perceived (n=24) and shaped (n=3)—see Figure 5. It means that the children were active in performing motoric activities such as hiking on trail, picking fallen durian fruits, plucking leaves, climbing slippery slopes, holding treelets and rattan climbers to climb slopes, ducking under fallen log, picking pebbles from stream bed, throwing pebbles on water surface, and throwing stones to tree trunk, and many more.

The utilized affordances were associated with perceived ones such as feeling cold while swimming in the stream, seeing bulbuls and magpie robins while swimming in the stream, watching peers searching for shrimps in the stream, and scanning and avoiding thorny rattan while climbing down the slopes. The results suggest that the forest and orchard afforded a variety of functional properties to engage their attention (Kytta, 2003) and to permit physical movement and competency (Kellert, 2002).

The children only managed to manipulate three properties on the elements found in the forest and orchard: making camp fire from fallen branches and logs, making cloth-line from a bamboo pole to dry their clothes, and making a fishing rod by cutting a small branch from a tree. Low amount of shaped affordances means the children perceive low opportunity to practice hands-on experience with the elements of the forest and orchard. Possibly, this was due to the short span of time the children experience in the outdoor settings.
2. Taxonomy of Affordances

As can be seen, vegetation provided the highest number of affordances (n=13). Examples of activities with the vegetation were picking young durian fruits, plucking young garcinia leaves, hurdling over fallen logs, holding treelets to climb slippery slope, and touching moss with feet and hands. The result suggests that the forest and orchard possessed a variety of elements for the children to play. Not only the children recognized the parts of the vegetation, they also able to identified the difference branching character of the trees. Sixty per cent of them recognized the monopodial tree over the sympodial ones. We speculate that they were familiar with the sympodial trees found in their home garden and thus able to differentiate the unfamiliar and uncommon one, the monopodial type (Figure 7). This perception is somewhat consistent with the idea of Summit and Sommer (1999) that vertical slender trunks attract children’s visual response.

Figure 6: Taxonomy of affordances of children experience in forest and orchard setting

Figure 7: Slender trunk of huge monopodial tree attracted visual response
2. Taxonomy of Affordances-cont.

Water, attached objects and animals afforded nine functional properties each. Interestingly, in the stream, apart from swimming, the children searched shrimps and scooped the crustacean using plastic sieve, threw pebbles into water, scooped sand with both hands from stream bed, splashed water over peers, rested on boulder, felt cold after staying long in the water and felt water moving around their body. This finding is partially paralleled with study by Ismail (2008) that forest stream forest affords 87 functional properties.

Figure 8: Searching and scooping shrimps, bathing and resting on boulder, molding sand were performatory and exploratory affordances at stream

Figure 9: In the forest children hear sounds of animals such as cicadas and birds
3. Types of Affordances

The forest and orchard offered 15 times more positive affordances \((n=61)\) than negative ones \((n=4)\) to the children. The positive affordances overwhelmed the negative ones suggesting the functional properties of the forest and orchard were effectively perceived and utilized by the children. In other words, the children perceived the orchard and hill forest as places that afford a variety of functional properties for play and learn about nature. The four negative affordances were fear of leeches, fear of thorny rattan, tired to proceed hiking the forest hill and tired after climbing down the slope. However, the negative were contemporary stimuli attention (Kaplan et al. 1982, 1998; Sobel, 2002, 1998; Louv, 2006; Ulrich, 1995) because the positive ones overwhelmed the children’s fear and anxiety. The vast difference between the positive and negative affordances suggests that children have recognized the forest and orchard as play spaces offering fascinating sensorial and motoric activities.
CONCLUSION

In this study, the natural environment of a tropical woodland area is a suitable playscape for children to express their physical competence in term of socialization competence. Most of the play activities involved performatory and exploratory performances including climbing and sliding down slippery slopes, picking fallen fruits, plucking leaves from trees, collecting pebbles from stream bed and throwing the pebbles of stream surface, and many more. However, only a few activities were productive that is creating play tools from the natural elements that the children recognized their properties for play. In sum, experiencing in natural environment allowed children to express their cognitive, physical and social skills.
Profile of spatial offers children interaction in outdoor environment