



Designing for Children

- With focus on 'Play + Learn'

Learning through Landscape

Designing Natural Children Outdoor Play in Jakarta Indonesia

Susinety Prakoso, Universitas Pelita Harapan, Indonesia, susinety.prakoso@staff.uph.edu

Abstract: This paper addresses that the design of natural environment to promote greater learning opportunities for children. Limited space, lack of accessibility, lack of time and place, safety and security concerns, as well as advance influence of media and technology become problems in the development of natural children outdoor play area in Jakarta. This paper will look on the phenomena of availability and quality of children outdoor space in Jakarta. Then, concept and issues related to learning and play were introduced with literature references and examples. These concepts are used to view and discuss the conditions of children outdoor play in Jakarta. Finally, this paper will draw conclusions on what are the possibilities and design considerations need to be taken to enrich the design of outdoor play in Jakarta.

Key words: learning, children, natural, outdoor play, landscape

1. Introduction

The development of physical structure in Jakarta has been growing rapidly since the last two decades. This is certainly a phenomena happened for the Jakarta metropolitan area with 9.04 million inhabitants on 666.52 km² land area (density of 13.664 people/km²), which definitely give impacts on the decreasing of green open space systematically. The results are the environmental imbalance. Today, area of green open space in Jakarta is only left ±9.8% far lower than the green open space standard for a good city which is 30%. This fall in number also reflects the conditions of outdoor play area in Jakarta. Not many children have an outdoor play area in their neighborhood. If they have, then not all are accessible and safe for children to play and learn. Therefore, there is a growing concern regarding the availability and the quality of children outdoor spaces in Jakarta. Children, as part of a large group of urban space users, are usually excluded in designing urban outdoor spaces. Research and experience show that access to and the quality of urban outdoor environment as a whole are very important for children's development (Kylin,

1999), where a good quality of outdoor space for children can influence children's development in physical, emotional, social and cognitive (Marcus and Francis, 1998).

The focus of this paper is children of age 0 - 12 years. The paper is structured into few parts. First, it will look on the phenomena of availability and quality of children outdoor space in Jakarta. Second, concept and issues related to learning and play, the important of outdoor play as well as the important of natural landscape outdoor play, were introduced with literature references and examples. Third, these concepts are used to view and discuss the conditions of children outdoor play in Jakarta. Finally, this paper will draw conclusions on what are the possibilities and design considerations need to be taken to enrich the design of outdoor play in Jakarta.

2. Concept and Issues of Learning and Play

2.1 The Definition and the Concept of Learning & Play

It is important to look at what is learning and what is play. How we define the term "learning" and "play" affects what design qualities and learning experiences to consider. Psychologist Andrew M. Colman characterized the definition of learning as "any lasting change in behavior resulting from experience, especially conditioning" or "act or process of acquiring knowledge or skill or knowledge gained by study" (2001, p 404). The Grolier International Dictionary defines learning as "the acquiring knowledge of or skill in by study, instruction, practice and experience" (1992, p.562). According to Julie M. Johnson "learning whether acquisition or participation, may be manifested through cognitive, social, emotional and physical development" (2000, p.2). These definitions of learning must be taken account into the design of children outdoor environment.

Researchers Anthony D. Pellegrini and Peter Blatchford (2000) define the concept of play as follows:

- a. Play is the model development activity of childhood.
 - b. Play is an imperfect version of mature behaviors that must be learned.
 - c. Play can be used as an instructional mode (as a way of teaching skills and concepts).
- Their study (2000) also explores three dimensions of play: as psychological disposition according to contexts and as observable behavior.

From definitions of learning and play above, it can be concluded that the process of learning as a way of acquiring knowledge or experience can be obtained through play

activities, which will effect cognitive, social, emotional and physical development of children.

Play is the primary vehicle for learning and development in early years (Marcus and Francis, 1998). Since they were born, children begin a marvelous path of development in many dimensions: cognitively, socially, emotionally and physically (Ruth, 2000). The most significant dimension visibly seen is their physical changes. As they grow, every experience is the stuff of learning and learning is just like eating and drinking. They tend to be greedier than adults in everything they hear and see (Hertzberger, 2008). Learning through play activities is the way children acquire the physical, social and mental skills they need for life (Bartlett, 2002). According to Bartlett (2002), children's enormous potential of learning is encourage by diverse and stimulating environments. She also mentioned that research has found that the developmental benefits of play for children are directly related to the availability and variety of stimulating objects and opportunities.

2.2 The Important of Outdoor Play

According to Alys Flower (2005), more than one third of children never play outside. Children spent their time mostly at home and at school because the danger of playing outside or no outdoor play area in their neighborhood. Most of outdoor play activities can be found in local parks, any open spaces (including streets and vacant lots become outdoor play for children who live in an over populated urban centers), backyard or front yard and school gardens. Yet, majority of those spaces are uninspiring and in poor conditions. Why outdoor play is so important? According to Heather Greig-Smith (2003), children may turn to dangerous activities and engage in anti-social behavior because they are being denied adventurous play. The lack of concern to the needs of children in the design of urban space may turn children to anti-social outlets. Children's everyday places and activities affect not only their understandings but also their development in other ways - physical, emotional, social and spiritual (Johnson, 2000).

Why people have to concern about outdoor play area if play and learn activity can happen more or less anywhere? Every space is not alike or can be made alike. Physical conditions of outdoor play area always influence the quality activity in some way or another (Cosco and Moore, 1999). Many research show evidence that design of outdoor play area will have a positive influence on children's development. Excitement and diversity in outdoor play area stimulate and support children to provide an experimental base to carry them

forward effectively in adulthood. Exposure to nature offers benefits to their cognitive, emotional, social and physical development (Johnson, 2000).

2.3 Natural Landscape for Learning and Playing

Numerous studies of outdoor experiences have shown that natural outdoor environments have an impact on humans. They can reduce stress and create a feeling of well-being (Stoeklin, 2000). But not many children respond positively to natural play areas. Sometimes nature can make them uncomfortable, this impulse called Biophobia (White and Stoeklin, 1998). Later, White and Stoeklin (1998) also mention that to overcome this, children need to have more time and free access to natural areas and environmental education needs to start at early ages with hands-on experience with nature. Therefore, natural areas are critical elements in children outdoor spaces (Marcus and Francis, 1998). Natural areas can represent different play opportunities for children. Its rough surface provides movement challenges and topography and vegetation provide a diversity of different designs for playing and moving (Fjostoft, 2004).

White and Stoeklin (1998) describe the importance of nature experiences to children as follows:

- a. Improves recall of information, creative problem solving and creativity.
- b. Positive linked with the development for lifelong imagination and the sense of wonder (wonder is important as a motivation for life long learning).
- c. Essential to the emotional health of children (positive feelings).
- d. Important to children's development of independence and autonomy.

The positive aspects of natural outdoor environment according to Fjortoft are "natural environment qualities are most appreciated by children: colors in nature, trees, woodlands, shifting topography, shaded areas, meadows, places for climbing and construction and challenging places for exploring and experience" (2004, p.23).

Interaction with nature can stimulate the development of mind, body and spirit (Marcus and Barnes, 1999). That was explored comprehensively by Marcus and Barnes (1999) in their book *Healing Gardens: Therapeutic Benefits and Design Recommendations*. Through play, children can work through internal conflicts, express fear and communicate non-verbally (Marcus and Barnes, 1999) and through nature's wonders (sand, water, mud, trees, bushes, worms, butterflies, birds) children received all the necessary motor stimulation (Olds, 2001).

Discovery garden (White and Stoecklin, 1998; Johnson, 2000) or natural play are naturalistic play and learning environment for children that offer challenges to children. It relies on natural components (such as plants and topography) to provide play experiences, and enhance these natural components with built elements and manipulatives ('loose parts'). It also can become a place that separates children from ordinary life and adds a layer of special meaning to the place (Cosco and Moore, 1999). The sense of place explored in discovery play garden or natural play can enhance process, activated through play, help elaborate the place beyond the confines of everyday life, providing children with a sense of belonging, identity and ownership - the culture of the place (Cosco and Moore, 1999).

3. Discussion on Children and Outdoor Play in Jakarta

The total population of Jakarta metropolitan area is 9.04 million people. 20% of the total population is children of age 0-12 years. They come from different family background and living conditions. Generally, their social & economy conditions and living/housing conditions reflect where they usually play daily.

Social & economy conditions	Living / housing conditions (majority)	Outdoor Play typologies	Remarks
Poor family	Temporary house made of waste materials on slum/illegal area by the railway, riverbanks or unoccupied land.	Street, alley, river banks, railway corridor, vacant lots or unoccupied spaces.	Public space
Low income family	"Kampong" tradition village (1-2 row houses) in a very dense area.	Street, alley, vacant lots, courts, yards, school grounds, vacant lots or unoccupied spaces.	Public space
Middle income family	Housing complexes (1-2 storey row landed houses) or apartment (public/private owned)	Street, courts, school grounds, Back/front yards, pocket/mini parks, neighborhood parks.	Private/Public space
High income family	Landed houses with gated community and fully accessed to private facilities	Back/front yards, Neighborhood parks, school grounds, pocket/mini parks inside the housing complexes	Private space

Table 1. Classification of children social status, living conditions and play typologies in Jakarta

Children who come from middle to high income family are more exposed and familiar with media and technology influences such as TV, computer games and internet. They bring tendency for children to play indoor. High crime rate brings safety and security issues that force their parents to protect and limit their children play outdoors. Rapid

development of malls in Jakarta also give impacts towards the tendency for children to play indoor. 90% of malls in Jakarta have synthetic indoor playgrounds. Recently, parents are more favorable to indoor playground at malls because the indoor playgrounds are more safe and secure although they are not free of charge. Average time for children from middle-high income family to stay outdoor after school hours are 1-2 hours/day. The rest of the time, children spend their time indoor (at home or at school). Those situations are not likely for children from low to poor income family. They are probably aware to media and technology as well as malls, but their parents economic situation make impossible for them to afford media, technology & malls. In that case, their choices of play are limited to any open space they can find between buildings close to their house. Mostly, their neighborhood have no outdoor playgrounds or easy access to outdoor playground.

In general, outdoor play areas in Jakarta are not all in a formal play ground. It is mostly in the form of conventional playground (mostly only equipped with swings, slides, climbers made of rubber plastic or metal on a hard or soft surfaces). It is also very common to come across children play in an unsafe informal playground, such as streets, alleys, courts, vacant lots, river banks, railway corridor, which are not designed as play space. The availability of outdoor space for children in Jakarta is very limited (approximately only 1 m² space per child) not mentioning its design quality. These conditions were resulted due to the lack of proper management & maintenance (either by private or public institution) and poor design quality due to lack of attention to children needs. Good quality of outdoor playground can only be found in high-end housing gated communities (private owned) or apartment buildings. Therefore, public or private institution needs to pay attention closely to the important of outdoor playground. Designers need to design children outdoor space with consideration to balance these all needs (Olds, 2001):

Needs	Supported Environment
Movement	<ul style="list-style-type: none"> - Adequate space to move within safe and tolerable limits. - Free space with boundaries for children to explore and to access.
Comfort	<ul style="list-style-type: none"> - Environment setting that support comfort zone (breezes, shade, light, scale, soft material, etc.)
Competence	<ul style="list-style-type: none"> - A supportive environment helps children fulfill their own needs, execute task easily, manage their own tools and materials and control their own movement from place to place. - Provide environment that allows them to do a variety of things, to do at a variety of places and to organize and to access easily things and places.
Control	<ul style="list-style-type: none"> - Environment that supports some privacy, predictability and orientation.

Table 3. Children outdoor space needs

Furthermore, the important to introduce natural landscape is need to be taken into consideration by all (designers, public & private institution as well as residents). It has been proven through research (Marcus and Francis, 1998; Stoecklin, 2000; Cosco and Moore, 1999; Marcus and Barnes, 1999; Olds, 2001; Fjostoft, 2004) that bring nature into the design of outdoor playground are important to children development needs. But nature at outdoor playground can create a more comfortable micro climate conditions. The following are proposed considerations and possibilities on how to introduce the design of natural outdoor playground in Jakarta:

- a. Involvement of residents and children through participatory approach.
- b. Considerations to design strategy to formulate the quality of outdoor playground that can promote greater learning experiences and play activities.
- c. Design of natural outdoor playground needs to be placed fit into context (surrounding neighborhood) in order to become places to which can give an identity of place to children and people.

4. Conclusions

Today, most of children born and grow up in Jakarta has limited outdoor space which is expose to nature. A good easy to access and safe public outdoor play area is very limited to certain status social only. Lack of proper management, poor maintenance (limited budget), limited of space, falling percentage of green space periodically due to rapid development, crime rate, hot & humid climate, technology & media influences are among the reasons why the development of outdoor play in Jakarta are not growing. If they are then the design of outdoor play is conventional, unchallenging, and designed without really understand what children needs (mostly lack of bath room, adventure and creative play). This paper wants to highlight that natural landscape outdoor playground (offers more diversity and stimulating environments) can be a solution both to promote children's development as well as to create a breathe or an oase in the middle of polluted city like Jakarta.

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