

## Identifying Natural Playscape Elements in a Neighbourhood Park: A case Study of Kuantan, Malaysia

Nor Atiah Ismail, Shaharuddin Bin Safiullah, Mohd Yazid Mohd Yunos, Nangkula Utaberta, Sumarni Ismail

Department of Landscape Architecture, Faculty of Design and Built Environment, Universiti Putra Malaysia

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### ABSTRACT

Nowadays playground looks stereotype because it is relies on manufactured products. This type of playground is more focusing on physical activity but less in generating social skills and cognitive development. Many believe that understanding of children's active living in their relationship to build environment is possible through concept of affordance. Through this concept, it gives understanding impact of the physical environment associated to the children by generate physiological and psychological. This paper is to identify for natural playground area that can enhance children's play experience and their outdoor exploratory learning and investigate of children preference for natural playscape elements as part of their play experience. It is important to design and develop children's playscape that can stimulate their physical, social skills and cognitive development

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## INTRODUCTION

Children love to play and it is important to develop their physical and mental health. It is part of childhood development process. An outdoor playground spaces is the most favourable to challenge their physical skills and capabilities to develop new experience [9].

Many believe that understanding of children's active living in relationship to build environment is possible through concept of affordance. This concept could help children understand the impact of physical environment associated to them [8].

In Malaysia, the need for proper design of playgrounds has been spelled out in the doctrine produced by the Urban and Village Planning Department (1997). In the early years, the children maximized their surrounding living environment as favourite play spaces. The researcher believes that by interacting with natural environment, children learn the pattern of life and they have a better chance to use this opportunity to cater multi functions skills [2].

Today playground spaces is focusing more on man-made rather than complementing it with natural environments. Commission for Architecture and Built Environment (2008) give statement by saying that the play equipment comes from manufacturer and these companies often design the play spaces too. This is why most of the playground looks similar.



**Fig. 1:** Pictures of modern playground. Source: [www.thewackyduo.com](http://www.thewackyduo.com)

This study intends to identify natural playscape elements in a neighborhood park and the selected case study are will be in Taman Gelora Neighborhood Park, Kuantan.

## 2.0 Research Problem:

### 2.1 The state of play:

Today design of play spaces is lack of imaginative and collaborative approach. This issue arises by the Commission for Architecture and Built Environment, stated that the providers are too much relying on manufactured playground which comprises of swing, see saws, slides and other standard equipment. Its look attractive but do not offer many opportunities in generating of physical, cognitive and social skills development.

### 2.2 Identity of places:

Today playground consist various type of play structure in one area. This manufactured design look similar at every place. Designing play spaces for children need to consider *the spirit of the place* that is '*genius loci*'. In other word, is to consider the existing qualities and atmosphere of the place. It can be the starting point in deciding the new play spaces. Referring to Play England [17], design of playground should be creative enough so it can help to understand the characteristics and history of the site. This effort could help to establish '*a sense of a place*' relate to existing site condition for playground design.

### 2.3 Back to nature:

Many studies have discussed on children benefit in natural environments. According to Lester and Maudsley, "Grassy mounds, planting, logs and boulders can help to create much more attractive and playable setting for equipment and natural setting can also help attract birds and other wildlife and bringing play space alive" (2006). This idea was supported by Olds that "participation with landscape features such as stream or natural equipment are exciting sensory experience for the children" (1987). Other natural elements such as temperature, wind, stone, sand, animals and vegetation also can activate the children's five sense. Kellert [14] believe that human attraction to nature begins from childhood. Their interactions, perceptions and behaviours relate to biological diversity.

## 3.0 Research questions

### Research question 1:

What are the characters of natural playground design that help to enhance children's play experience and outdoor exploratory learning (ranging 6 to 12 years old)?

### Research question 2:

What are the responsive natural playscape elements that able to enrich children experience?

## 4.0 Theoretical Preposition of Natural Playscape:

Children experience in natural setting is crucial for their personal development. Moore and Wong [15] say that children acquainted with natural attraction such as small animals, water, sand, earth, trees, and plants. Playground could be indoors and outdoors but most favourable for children is outdoor. Play spaces also have certain value for parents and careers of young children [7]. Forestry Commission described that "natural playscape is a term used to describe the creation of simple play opportunities in the natural environment" (2009). In urban settings it referred as nature parks, ecological parks or play parks. These parks design approach apply the same philosophy to accommodate in the high use areas.

#### 4.1 *Natural elements as playscape:*

Natural Playscape comprise playful landscape elements. It is integrate with vegetation and landform to make it lively. Using of sand, mud, stone and logs as part of their play equipment. White, R & Stoecklin, L writes that “children experience the natural environment differently than adults because children experience nature not as background for events but rather as a stimulator and experiential component of their activities” (1998).

#### 4.2 *Children’s development in natural playscape:*

Many research on children’s development says that natural play give benefit in their learning, healthy growth and development. Kahn says that “Children like to affiliate with nature for their cognitive, physical and social development” (2002). DeBord, K. [5] from Michigan University Health System in her studies of childhood mentioned that general characteristic of children between the ages of 6 and 12 (also called childhood stage). Children in this group normally spending most of their time playing with friends compare to their parents. Children test their limits and ability through play. They keep repeating certain skills until they mastered them. Fjortoft has mentioned that “playing in a natural environment give positive effects on children where they become more creative in their play and play activities and play forms are increasing” (2001).

There are 4 types of play activities as follow:

1. *Physical activities*; give opportunities in taking risk, find challenges and develop new skills mostly focused on strength.
2. *Sensorial activities*; give opportunities for a sense of ownership, pride and belonging. It is allow children in explore, discover and to understand their play environment.
3. *Creative play*; give opportunities to do things which they can study and learn through play.
4. *Social activities*; give opportunities among them to share with others and allow them to recognize their individuality in a public places.

#### 5.0 *Methodology:*

On this research methodology, qualitative research approach is more appropriate because it is to understand the perspectives of participants and explore the meaning they give towards these issues. Generally, this method is to generate words rather than numbers as data for analysis. These methods aim to answer questions about the ‘what’, ‘how’ or ‘why’ of these issues [4].

#### 5.1 *Photo elicitation:*

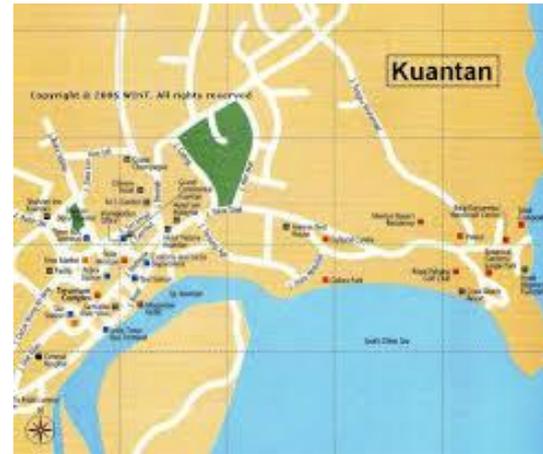
It seems that photo elicitation have been specifically used among working with young children. It has been used in children’s perception of landscape. The photographs serve as a means of communication between the researcher and the participants. The specific photos of activities and design elements can be selected from early discussion or suggested in literature review. These photos should be coherent and interesting enough to elicit information from young children. They will response and comments of these photos (visual material) and recorded in specific form provided. The answer will be categorized in terms of preferred or not preferred photos by the children and also their reason why they like the particular photographs [20].

#### 5.1 *Data collection method:*

The case study and photo elicitation method is very helpful for children to give them overview and response to playscape elements and activities related to playground in their neighbourhood residential. Respondents of this research are children aged 6 to 12 years old. Through structured interview at site by using photo elicitation, data was collected among 30 children. **Group 1** aged 6 to 8, **Group 2** aged 9 to 10 and **Group 3** aged 11 to 12. Interviews last between 15 to 20 minutes. They will be showed to 6 photos of Natural playground, 8 photos of Natural playscape elements. Questions should be simple for young children to response. For example, they will be asked about whether they like or dislike suggested playground design or suggested playscape element and the reason for their answers and it is will be documented in the Data Collection Form.

#### 6.0 *Case study:*

This research is conducted at Taman Gelora Neighbourhood Park, Kuantan. The site located at the right side of Sungai Kuantan river mouth about 57 acres. This neighbourhood park consists of water body (lake), car park, playground, Stall, jogging track, football field, open space and rich with matured Rhu pantai trees. This park served as one of the recreational area for Kuantan’s residence especially nearby community. It is favourite spot for children play area.



**Fig. 2.0:** Key plan. Source: www.destination360.com

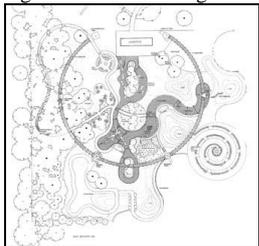
**Fig. 3.0:** Location plan. Source: www.finetravel.com



**Fig. 5.0:** layout plan. Source: Own source.

For this research, three successful natural playscape projects are referred which is The Valbyparken Nature Playground in Copenhagen, Denmark, Balmaha Play Landscape in Loch Lomond, Scotland and Oppenheimer Playscape in Vancouver, Canada. There were three factors which are to be discussed which are Design approach, Spatial relationship and Playscape component and elements. The following figure (table 1.0), shows analytical discussion on these three selected parks.

**Table 1.0:** Comparative analysis of the three case studies.

FACTORS	CASE STUDY 1 Valbyparken Natural Playground	CASE STUDY 2 Balmaha Play Landscape	CASE STUDY 3 Oppenheimer Playscape
Size/Scale	20,000 square meters.	1.5 acre.	1.0 acre.
Site context	Formally a rubbish dumping area near urban area that has been regenerate into nature garden. 	Located at most naturally beautiful and bio-diverse area which is part of National Park. 	Located within a large community park in Richmond's City Centre. 

<p>Design approach</p>	<p>With a theme of “The world is not made of standard shapes and sizes with even surfaces”.</p> <p>Promote Natural Play to ensure that playgrounds do not become static and uniform.</p> <p>The playground area was designed in organic form with adulating landform to create natural environment.</p> <p>Encourage the importance of Risk Taking in play.</p> <p>Adapt the concept <i>spirit of the place</i> or <i>Genius loci</i>.</p> 	<p>With a theme of “Educate by nature”.</p> <p>Promote Natural Play to avoid standardized in playgrounds design which is dynamic and flexible.</p> <p>The play spaces combine with natural materials, features landforms and vegetation to form high levels of play value.</p> <p>Encourage the importance of Risk Taking in play.</p> <p>Adapt the concept <i>spirit of the place</i> or <i>Genius loci</i>.</p> 	<p>With the theme of ‘Nature-based play and integration of play’</p> <p>Creating organic form with flowing spaces where the structures and systems combine to form a setting that evokes the natural.</p> <p>Encourage the importance of Risk Taking in play.</p> <p>Adapt the concept <i>spirit of the place</i> or <i>Genius loci</i>.</p> 
<p>Spatial relationship</p>	<p>Six towers were positioned as specific points to tie the whole organica shaped play space.</p>	<p>The central area of the playground area is designed to tie the other play areas to form one big play spaces.</p>	<p>The playscape area is designed as a transition area between the Richmond River and connecting the park area in a natural environment.</p>
<p>Function</p>	<p>Served as attractions places.</p> <p>Give opportunities for local children to explore play that teach them the wonders of the natural world.</p> <p>A place where children can experience and develop the real skills and abilities.</p>	<p>Served as attractions places.</p> <p>Give opportunities for local residents or visitors to play in a more authentic “natural” environment.</p> <p>A place where children can experience and develop the real skills and abilities.</p>	<p>Served as play environment that connects children with natural systems.</p> <p>Give opportunities for local children to explore play those teach about Interaction with elements and processes to the natural systems.</p>
<p>Component and elements</p>	<p>Preservation of the original woodland, wide stretch of meadow outside the playground and create new hills.</p> <p>Provide large play area with sand and gravel.</p> <p>Creating rows of little hill to separate the playground with the park.</p> <p>A village of woven willow huts and plaited fences.</p> <p>A very big snail-shaped mound with a path spiralling up it to a look-out point.</p> <p>A wooden bridge.</p> <p>Creating many small green islands inside the playground area.</p> 	<p>Uses of natural contours of the hillside create mound to make the environment more organic and naturally with the surrounding.</p> <p>Using of trees, logs, boulders, sand, grit and water as play component.</p> <p>Provide a large area with sand and gravel as a play area.</p> <p>Include ancient crannogs character as element for shelter.</p>  <p>Planting and preserve of wild flowers inside the play area.</p> <p>Attract birds and other wildlife to bring the play space to life.</p> <p>Creating dugout canoes as special features in playground area.</p>	<p>Creating of natural contours to create mound and make the spaces more organic and naturally.</p> <p>A creek bed for water play.</p> <p>Jumping stones.</p> <p>An outdoor theatre</p> <p>Natural wood and rocks to climb</p> <p>Sand pit.</p> <p>Colored poles stuck in the ground.</p> 

### 7.0 Research analysis and findings:

#### 7.1 Analysis of data from photos of natural playground:

Respondent to the entire natural playground photos are as expected. Respondent are fond to play different types of playground *influence by their gender, physical abilities and differences of age*. For example, female respondent at all groups shows more interest to play with the natural playground in **photo No.1** (shows sand pit, post walk and stepping stumps). This result shows that female respondents are keen of passive activities such as imaginative play and pretend play. They like to express their creativity while socialize among them. They draw and play with sand under the shade of trees. It is also offer simple physical play such as jumping on stepping stump and walking the balancing log to test their skills. Only male respondent at **group 1** (age 6-8 years) like to share the same interest compare to elder group.

Male respondent at all groups show more interest to play the natural playground in **photo No.2** and **No.6** (climbing play structure, climbing rope and extreme free play) which offer physical activities. They prefer adventurous games to satisfy their physical skills or called 'games with rule play'. "*Men like to be a conqueror*", compare with female respondent they only interested of its natural setting. This result shows that these types of natural playground offer them advantage of physical play to test their strength and skills ability.

Photo of natural playgrounds **No.3** and **5** combine large sand pit, big play structure, hill slide, rolling topography and swings. Male respondent at **group 1**(age 6-8 years) and **2** (age 9-10 years) only interested in physical activities such as climbing play structure, hills slide and play on rolling topography to test their physical and skills. However, female only interested to play swings and sand. This is the same result with the above analysis where female respondent more interested of passive activities.

Most of the respondents like the natural setting of natural playground at photo **No.2, 4** and **6**. A simple mound can give a feeling of fun and adventure. They prefer to play at shady area with lots of trees, grass and bushes. They love to share their playscape with some of the wildlife such as bird and squirrel that bring the play space alive. This will create sensorial activities with a sense of ownership and sense of belonging.

#### 7.2 Analysis of data from photos of natural playscape elements:

Respondent to all of the natural playscape elements in the photos are as expected. Respondent are fond to play different types of activities *influence by their gender, physical abilities and differences of age*. For example, majority of female respondent at **group 1** (6-8years) and **2** (9-10 years) only shows interest to play with the playscape elements in **photo No.2,4,6** and **7** (shows sand pit, water, loose parts and fallen logs). This result shows that female respondents and young male respondents much prefer of passive activities. These playscape elements offer imaginative play and pretend play. It encourages co-operative and creative play. They like to express their creativity while socialize among them. It is also offer light physical play such as jumping and walking on fallen logs to test their skills and balance which female respondent also have the same interest.

None of female respondent at **group 3** (age 11-12 years) show interest in playscape elements in photo **No. 2,7** and **8** which more elder (sand pit, loose parts and explore nature). This interest was influence by their age. However, majority male respondent prefer to play with playscape elements in photo **No. 3** (climbing play structure). This result shows that at every age level prefer of climbing activities.

Male respondent at every groups shows more interest of natural playscape elements in **photo No.1,3,5** and **8** (Balancing beam, climbing boulders, climbing play structure and free play) which offer active physical activities such as climbing big play structure. They like more adventurous games to satisfy their physical skills or 'games with rule play'. Only a few female respondents at **Group 3** (age 11-12 years) like to share the same activities. The result also shows that the natural playground of photo **No.2** and **6** (climbing play structure, wall climbing and climbing rope) much prefer by male respondent at **Group 3** (age 11-12 years) where their physical strength and skills can be tested.

#### 7.3 Summary of data analysis:

Generally from the data analysis, children preference for natural playscape elements as part of their play experience can be summarizing as table 2.0.

**Table 2.0:** Summary from data analysis of natural playscape elements.

AGE (Years)	LEVELS OF ACTIVITIES	GENDER	TYPES OF PLAY	PLAYSCAPE ELEMENTS PREFERENCE
6 - 8	Passive	Male Female	<ul style="list-style-type: none"> <li>▪ Imaginative play.</li> <li>▪ Sensory play.</li> <li>▪ Creative play.</li> <li>▪ Social activities.</li> </ul> 	<p><u>Water elements.</u> Flowing streams, paddling pool, dry fountain and “village pump”.</p> <p><u>Earth elements.</u> Natural soft surfaces such as sand, mud and grit.</p> <p><u>Softscape elements.</u> Proposed and preserve local plants. Shade trees and shrubs.</p>
	Semi active	Male Female	<ul style="list-style-type: none"> <li>▪ Physical play.</li> <li>▪ Social activities</li> </ul>   	<p><u>Climbing elements.</u> Fallen logs, balancing post, climbing small play structure and log ladder.</p> <p><u>Jumping elements.</u> Fallen logs, logs steps, stepping stone and stepping stumps.</p> <p><u>Landform elements.</u> Slope, small hills, mounding, rolling topography and natural terrain.</p> <p><u>Loose parts elements.</u> Swing and slide.</p> <p><u>Softscape elements.</u> Proposed and preserve local plants. Shade trees and shrubs.</p> 
	Active	Male	<ul style="list-style-type: none"> <li>▪ Physical play</li> </ul> 	<p><u>Climbing elements.</u> Rope climbing, climbing boulders, climbing super play-structure and unique structures or sculpture.</p> 
9 - 10	Passive	Male Female	<ul style="list-style-type: none"> <li>▪ Imaginative play.</li> <li>▪ Sensory play.</li> <li>▪ Creative play.</li> <li>▪ Social activities.</li> </ul>	<p><u>Water elements.</u> Flowing streams, paddling pool and “village pump”.</p> <p><u>Earth elements.</u> Natural soft surfaces such as sand, mud and grit.</p>

				
	Semi active	Male Female	<ul style="list-style-type: none"> <li>▪ Physical play.</li> <li>▪ Social activities.</li> </ul>  	<p><u>Climbing elements.</u> Fallen logs, balancing post, climbing small play structure and log ladder.</p> <p><u>Jumping elements.</u> Fallen logs, logs steps, stepping stone and stepping stumps.</p> <p><u>Landform elements.</u> Slope, small hills, mounding, rolling topography and natural terrain.</p> 
	Active	Male	<ul style="list-style-type: none"> <li>▪ Physical play.</li> </ul>  	<p><u>Climbing and hanging elements.</u> Climbing boulders, Wall climbing, unique structures or sculpture and climbing rope.</p> <p><u>Hanging elements.</u> Rope ladder and post ladder.</p> <p><u>Hardscape elements.</u> Tree house.</p>
11 - 12	Semi active	Male Female	<ul style="list-style-type: none"> <li>▪ Imaginative play.</li> <li>▪ Sensory play.</li> <li>▪ Creative play.</li> <li>▪ Social activities.</li> </ul> 	<p><u>Water elements.</u> Flowing streams, paddling pool, dry fountain and pond.</p> 

			<ul style="list-style-type: none"> <li>Physical play.</li> </ul>	<p><u>Climbing and hanging elements.</u> Climbing boulders, Wall climbing, unique structures or sculpture and climbing rope.</p> <p><u>Hanging elements.</u> Rope ladder and post ladder.</p>
	Extreme	Male		

### Conclusion:

Playground is not just for outdoor activities but it served as a potential place for children's development in terms of their cognitive, physical and social skills. Risk taking in play is an opportunities for children to deal with their emotions and understand their physical and social world. Proper playground design also can encourage children to be spirited to except challenges. Anyhow, there are other factors that also need to look seriously such as maintenance and vandalism to the playground. Periodic maintenance should be done to ensure safety to users. This is include educate and enforcement to prevent vandalism. From the research it can be concluded that the natural playground could provide perfect package in creating fun, enjoyable, imaginative and encourage creativity play compare to man-made or manufacturer's products. Hopefully, with the information the standard and guidelines of playground design could be improved and more extensive studies could be planned for the future. It will contribute to the design playground by local authority or planners and other related professions.

### REFERENCES

- [1] Advantages of pilot study. 2014. <http://www.uis.edu/ctl/writing/documents/pdf>.
- [2] Brown, Pei-San, Sutterby, J.A. and C.D. Thornton, 2001. *The "Ideal" Outdoor Manufactured Play Environments*, Children's Institute for Learning and Development, <<http://www.ipema.org/mewrel6.asp>>
- [3] Commission for Architecture and the Built Environment (CABE Space) 2008. *Designing and Planning for Play*. Horticulture Week.
- [4] Creswell John W... 2006. *Designing and Conducting Mixed Methods Research*.
- [5] DeBord, K., 1996. *"Childhood Years: Ages six through twelve"*. Raleigh, NC: North Carolina Cooperative Extension Service.
- [6] Forestry Commission, 2009. *Natural Play. Simple and fun ideas for all*.
- [7] Free Play Network, 2008. *Design for Play: Ten designs principles*. The Department for Children, Schools and Families (DCSF) and the Department for Culture, Media and Sport (DCMS) 9: 5-31.
- [8] Gibson, E. and A. Pick, 2000. *An ecological approach to perceptual learning and development*. New York: Oxford University.
- [9] Ginsburg, K., 2007. *The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds*. PEDIATRICS, 119(1): 182-191.
- [10] <http://www.forestry.gov.uk/forestry/INFD-7LSEHW> 2009.
- [11] <http://www.socialresearchmethods.net/kb/datatype.php> 2014.
- [12] JPBD (Urban and Rural Planning Department) 1997. *The Global Planning Doctrine*. JPBD: Kuala Lumpur.
- [13] Kahn, Peter H., 2002. *Children's Affiliations with Nature: Structure, Development, and the Problem of Environmental Generational Amnesia*. In Kahn, P.H. and Kellert, S.R. (eds.) *Children and Nature*, Cambridge: The MIT Press, pp: 93-115.
- [14] Kellert, S.R., 2002. *Experiencing Nature: Affective, Cognitive, and Evaluative Development in Children*. In Khan, P.H. and Kellert, S.R. (eds.) *Children and Nature*. Cambridge: MIT Press, pp: 117-151.
- [15] Moore, R. and H. Wong, 1997. *Natural Learning: Creating Environments for Rediscovering Nature's Way of Teaching*. Berkeley: MIG Communications.
- [16] Olds, A.R., 1987. *Designing Settings for Infants and Toddlers*. In Weinstein, C.S. and David, T.G. (Eds.) *Spaces for Children: The Built Environment and Child Development*, New York: Plenum Press, pp: 117-138.
- [17] Play England, 2008. *Design for Play – A guide to creating successful Play Spaces*. The Department for Children, Schools and Families (DCSF) Play England website: [www.playengland.org.uk](http://www.playengland.org.uk)

[18] Playground Safety, [http://fha.maryland.gov/ohpetup/eip\\_playground.cfm](http://fha.maryland.gov/ohpetup/eip_playground.cfm)

[19] Research method, Types of Data.

[20] Taylor, E.W., 2002. *Using Still Photography in Making Meaning of Adult Educator's Teaching Beliefs*. 34 (2): 123-139.

[21] White, R and L. Stoecklin, 1998. *Children's Outdoor Play & Learning Environments: Returning to Nature*. Washington: Island Press.