CHAPTER 01

INTRODUCTION

1.1 Children and Play Space

Children and play resembles a symbiosis. Sutton-Smith (1995) explains play as rhetoric of progress which is good for children's physical, emotional, cognitive and social development. It is believed to prepare children for the future. Play is a child's natural medium for self-expression, experimentation and learning. For children, play is a biological drive and the primary mechanism through which they encounter and explore their immediate physical environments (Lester & Maudsley, 2007). As such, play is the process whereby children fulfil their drive to affiliate with nature, and natural environment provides optimal settings for children to engage and actualise their drive to play (Lester & Maudsley 2007).

It is a well-accepted principle in early childhood education that children learn best through free play and discovery. Children's free play is a complex concept that eludes precise definition, but children's play typically is pleasurable, self-motivated, imaginative, non-goal directed, spontaneous, active, and free of adult-imposed rules (White & Stoecklin, 1998). Play must contain five essential characteristic – intrinsically motivated, freely chosen, pleasurable, non-literal, and actively engaged (Rubin, Fein & Vandenberg, 1983 cited from Hughes, 2010). 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 (Hart, 1997).

Early childhood is the most critical period for the continuum of child's development. The child's physical as well as social-emotional and cognitive development takes the fastest course during this time, having more intense critical transitions[1]. Kellert (1993, 2002), Pentz & Straus (1998) found that early childhood (3 to 6 years) display more initiative and assume more responsibility in exploring and affecting their environment but affection to nature is little. However they generalized that early childhood children have various sense of wonder. The relationship on children development with the environment is emphasized by Sameroff's (1975) transactional theory that stresses the common nature of the interaction between the environment and the individual. There is a theoretical reason to believe that concern for the environment is based on an affection that can come only from autonomous, unmediated contact with it. The implications include the need for schools to allow young children to play regularly in as diverse a natural setting as possible surrounding

[1] The 1st International Conference on Early Childhood Education and Care (ECEC)
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the school and to be given gradually increasing opportunities to care for that setting (Hart, 1997).

Nowadays, most kindergarten and playground in Malaysia are equipped by custom made play structures. The paradigm is to search through the catalogues of playground equipment, pick a piece or two that looks good to the adult and place it in an outdoor space which resembles their childhood memories of playgrounds. However, the manufactured equipment has been limiting the gross motor activities and falls way short of the potential to be rich play and learning environments for children. Quality play involves the whole child: gross motor, fine motor, senses, emotion, intellect, individual growth and social interaction. According to Esbensen (1990) in MMI 1997 (cited from Fjørtoft (2004), children's physical play environments and facilities for play are changing and the opportunities for free plays in stimulating environments seem to be declining. This type of playground design prototype also denies children's right to experience the entire natural outdoors which includes vegetation, animals, insects, water and sand, instead of just the sun and air that manufactured playgrounds offer.

Therefore, the kindergarten playground setting should encourage children to engage with outdoor environment (natural and man-made) particularly during play activities. This goal needs to be brought into line with the principle and practices of local community participation in all countries and with all communities. The exposure to the outdoor environment encourages the intellectual growth and cognitive learning which also linked to the wider experience, and it became generally accepted that experience-based and action-based learning was the most effective (Francis, 1998). Moreover, King, 1987 (cited from Hart, 1993:272) verified that the relatively

unconstrained environments provided by playgrounds offer children opportunities to create, organize, and control their own play experiences.

Many scholars have the same opinion that children playing in the landscape are a dynamic interaction of a child. This is also agreed by Said (2006) who verified that play involves perceptual and physical actions. He demonstrated that during play the children gather and process the information through direct perception while moving in the landscape space. In general, childhood play involves three activities: performatory, exploratory and productive (Chawla and Heft, 2002). They explained the meaning of performatory is actions directed towards some object or other individual within some setting for an intended purpose. While the exploratory is actions directed toward discovering new properties in the environment. And, the third one, productive is actions transforming a feature into new environmental structures. In childhood development, these activities stimulate the children and allow them to get feedbacks such as dexterity and satisfaction (Olds, 1989). According to Olds (1987) dexterity is the speed and accuracy of children's movement. In turn, the perceptual and physical activities resulted to the acquisition of emotional bonds to the place such as sense of place, place attachment, place preference, place identity and favourite place.

Studies on children experiencing the outdoor environment by Kytta (2003) and Fjortoft (2004) found that the children value a place is not determined by its appearance but by its potential for affording play activities. Means that, the perception and movement of children are influenced by the functional properties of the environment (Heft, 1999). This is because children experience the environment in a deep and direct manner, not as background for events, but, rather as a factor or stimulator (Sebba,

1991). Moreover, children perceive and interpret the landscape not as forms but as functions (Gibson, 1979). In other words, the children recognize the functional properties (affordances) of the outdoor environment.

1.2 Problem Statement

Through preliminary observation and reviews at present, there are so many private and non government kindergartens operated in residential areas. Normally the kindergartens are developed in the row of terrace houses or shop houses. These kinds of refurbishment premises usually fail to locate some places for outdoor play spaces or playground areas due to the inadequacy of spaces. For instance, a kindergarten that is operated in the middle type of terrace houses has restricted the outdoor play space into the courtyard area which is normally paved and covered. Then in that case, the playgrounds that become the main subject in the development of kindergartens are neglected. Throughout the preliminary observations and reviews, seven kindergartens in the area of Petaling Jaya have been visited. The kindergartens were randomly selected with different arrangements and types in urban area setting. The kindergartens visited were managed by both government and private sector. In this study, four kindergartens were selected based on category indicates in Table 4.1 (page 61-62). From the visit, there are only some kindergartens and preschools in Malaysia that allow the environment to teach our children through their self-exploratory nature by offering outdoor play spaces as a ground to play and learn. The layouts and arrangements of kindergartens also play an important role in developing children mind and cognitive function. By separating the

classrooms from outdoor environment, their vision is restricted hence limiting their imagination as well as shortening their ability in finding space from one to another. This actually limits their sense of wonder. Furthermore, during time in kindergarten, children are controlled by time to play. Researches indicate that, children in kindergartens spend more times in classroom per day while just been given 30 minutes or less to play outside.

The natural environment must be adapted to meet these needs since the study shows that children who play in a creative adventure playground showed increased in visual motor integration as well as verbal and social skills, assertiveness and imagination (Yerkes, 1982:26). Such playground is made from novel forms, textures, and heights as well as manipulative materials cardboard boxes, toys, sand and water. In order to realize this aim, it requires understanding as well as assimilation of knowledge by adult about the complex ecological relationships and varied contexts of children's live.

1.3 Research Gap

In Malaysian context, the awareness on what and how the outdoor landscape features (natural and man-made) in the kindergarten playground could improve the children's cognitive performances, physical tasks and social performances are quite narrow. The reasons why there are so many kindergartens develop in the inappropriate location with insufficient space for children to play and express their play behaviour. For that reason, this study is carried out to evaluate the playground's designs in kindergartens that have

been neglecting the opportunity for the children to play and learn. While there has been some research on children and environments, little has been written about the effects of kindergarten landscape to children's play performance particularly in Malaysia. For example, study by Malone (2003) concerned about the variations in the physical qualities of the school ground that encourage children outdoor environmental learning. While Kytta (2003) focused on creating a model of four hypothetical types of environments (Bullerby, Cell, Wasteland, and Glasshouse) to measured the degree of children's independent mobility and the actualization of affordances in the context of the child-friendliness of the environment. Fjortoft (2004) have divided the 5 to 7 years old children into the experimental group and offered them to play in a natural playscape as playground, while the controls group continued using the kindergarten playground to compare the impacts of playing in a natural environment on motor development in children. The latest studies on children and environment was done by Kernan (2010) who put in range of localized and broader factors influencing affordances (possibilities for action) of young children outdoors in Early Childhood Education and Care Settings (ECEC), to measure whether these are perceived and utilized. The ranges of localization were connected fields of action and categorized as (i) indoor-outdoor connectedness, (ii) enclosed outdoor space, and (iii) the wider outdoors. The findings of the studies are summarized in Table 1.1.

Table 1.1: Appraisal of four studies investigating the impact of outdoor environment on children.

Authors (Years)	**Age of children**	**Outdoor/gardens criteria**	**Concerned of studies**
Malone (2003)	8 – 10 years old	Physical equipment/ properties which supported cognitive	Variations in the physical qualities of the school ground that encourage

		activities; physical/ motor skill activities; and social/non social play activities.	children outdoor environmental learning.
Kytta (2003)	8 – 9 years old	A model of four hypothetical types of environments was created (Bullerby, Cell, Wasteland, and Glasshouse)	The degree of children's independent mobility and the actualization of affordances in the context of the child-friendliness of the environment.
Fjortoft (2004)	5 – 7 years old	The experimental group was offered a natural playscape as playground, while the controls continued using the kindergarten playground.	The impacts of playing in a natural environment on motor development in children.
Kernan (2010)	1 – 8 years old	Connected fields of action: indoor-outdoor connectedness enclosed outdoor space, and the wider outdoors.	Range of localized and broader factors influencing affordances (possibilities for action) of young children outdoors in ECEC settings, and whether these are perceived and utilized.

Table 1.1, continued.

1.4 Aim and Objectives

The research focuses on outdoor play space that stimulates children's behavioural responses through play activities. This is to evaluate the kindergarten's playgrounds and the ability of such landscape features (natural and man-made) to provide challenging and stimulating play environments for children. The study deliberated on kindergarten's play space as children age 4 to 6 spend a substantial portion of their day in outdoor play environments, while in school. Thus, the main objectives of this study are as follow:

i. To examine the landscape features (natural and man-made) in kindergarten playground setting;

ii. To evaluate the landscape features (natural and man-made) as well as the outdoor play space design in kindergartens that afford children to play.

1.5 Research questions

To value the research aim and objectives the study seeks for the answer to the following research questions:

i. What kind of landscape features (natural and man-made) that can stimulate children's physical behaviour and performance in playing activities? (Refer page 128).

ii. How does the arrangement and setting in kindergarten's playground are able to encourage children's performance through play activities? (Refer page 128).

iii. Why landscape features (natural and man-made) are significant in kindergarten setting? (Refer page 129).

1.6 Scope of study

The research conducts four case studies as methodology which elicits data from multi-source and multi-method approaches which include observation, behaviour mapping, interviews and participatory project. A Theory of Affordance by Gibson (1979) is used in this study as the medium to analyse the data subsequently. There are five stages in the research methodology which includes (i) literature reviews, (ii) synthesis of theories and setting up the research strategies, (iii) data collection and evaluation, (iv) data analysis and lastly, (v) documentation of findings. The details of task in every stages are illustrates in the points below. The flow of the process is also explained in chart as shown in Figure 1.1.

Stage I: Literature Review

This introductory stage gathers information on history and theories of children and play spaces, children and outdoor environment, the impact of the outdoor environment on children physical performances or overt responses, kindergarten playground as learning space, the affordance as a theoretical concept, and current standard requirement from local authority on development of kindergarten in Malaysia context. Theories on children-environment relationship are studied from several fields including environmental psychology, paediatric psychology, early childhood education, architecture and landscape architecture.

Stage II: Synthesis of theories and setting up the research strategies

Information gathered in literature review gives insight on the criteria of landscape preferred by children, which result to positive or negative responses in physical performances towards landscape features (natural and man-made) that provide in outdoor play spaces in kindergartens. The criteria of outdoor play spaces or playground in kindergartens are compared base on children's need, educational desires and standard requirement by local authority in Malaysia. The set of domain is used to evaluate the landscape features (natural and man-made) of the kindergarten's playground that affect the physical performances of the kindergarten children.

Stage III: Data collection and evaluation

To gather the data of the children's physical performances in play activities toward the landscape features (natural and man-made) of the kindergarten's playground. Three measurement strategies conducted including: (i) observation and behavioural mapping on children's behaviour patterns, (ii) semi-structured interview with teachers and staffs, and (iii) participatory project with the children. The data are evaluated based on Theory of Affordances by Gibson (1979).

Stage IV: Data analysis

The focus of the analysis is to identify the overt (physical) responses in children towards landscape features (natural and man-made) that offered in the kindergartens play areas. Physical performances are analysed to compare the children's need, educational desires and current standard requirement of kindergarten's development in Malaysia circumstance**.**

The investigation anticipates that the performance of the kindergarten children will be more active when the children experience the outdoor playground that attach to the natural element.

The data of children's physical behavioural responses (overt) including movement and dexterity and nature of social play are presented by descriptive statistics and interpretative method of analysis. The statistics include frequency and percentage distributions and variability of dispersion (range). Data sourced from the children, teachers and staffs are compared to strengthen the results of the analysis.

The data of physical behavioural responses during play activities are analysed further into three stages of affordances (see Chapter 3). The analyses of affordances strengthen the result that the natural element is anticipated to create more positive affordances in children play behaviour. It means that the children performances in the outdoor play area that attach with the natural landscape elements are more than the traditional play equipment. The anticipated results are the domains of physical well-being of children and prospect consideration in developing kindergarten in Malaysia.

Stage V: Documentation of findings

The impact of kindergarten children physical performances is presented case by case in the following format:

(i) Frequencies of play patterns; (refer page 78 -104)

(ii) Frequencies of favourite play spaces (refer page 86, 92, 99 and 106).

(iii) The actualised affordances in relation to the natural landscape elements (refer page 109)

(iv) The results of the interviews teachers and staffs (refer page 107)

(v) Discussion and conclusion (refer page 127)

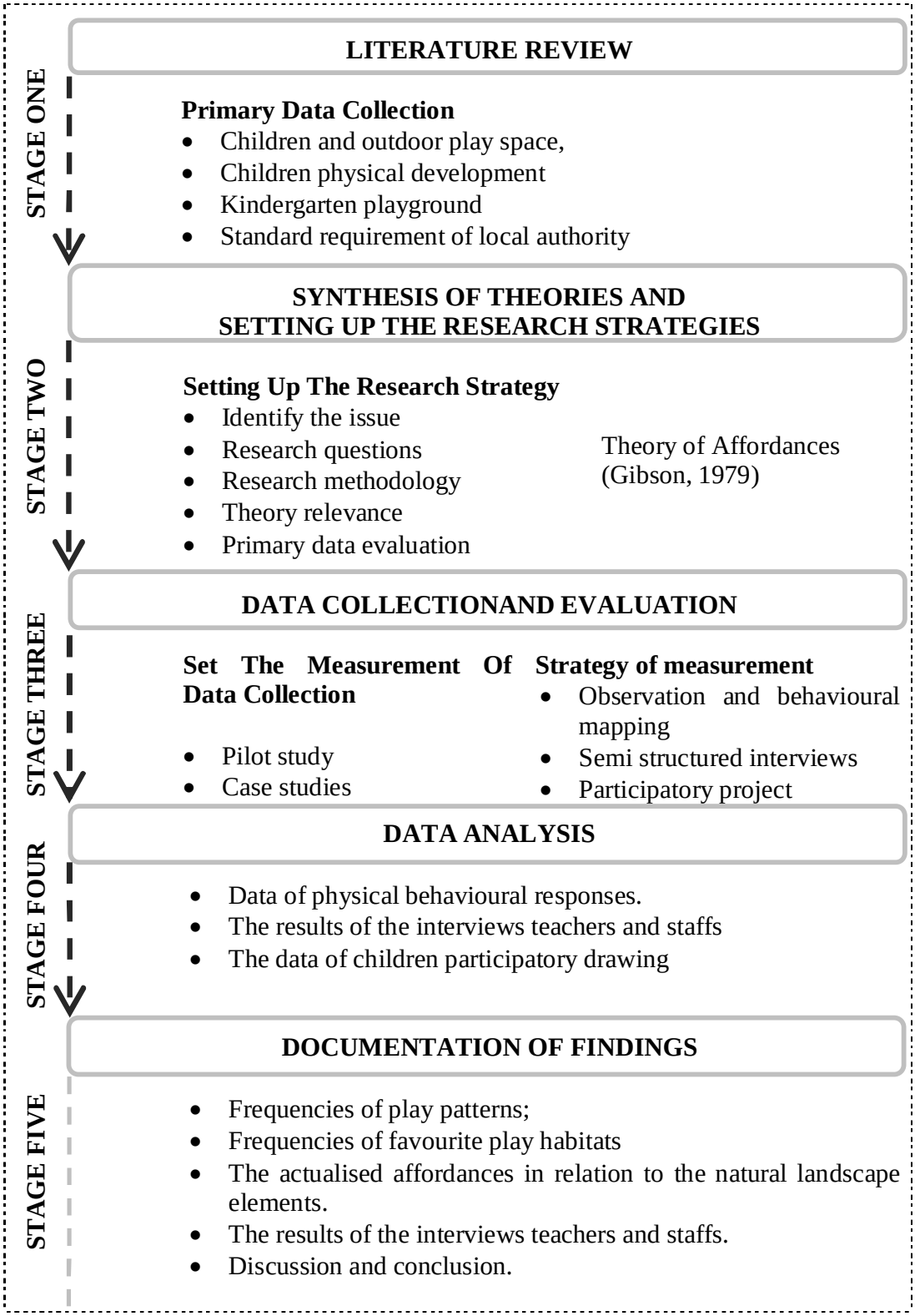

Figure 1.1: The flow of stage in the research process.

1.7 The organization of thesis

The study presented in this dissertation is divided into six chapters.

(i) **Chapter one** introduces the issue of the research. The chapter also contains the research aim and objectives. Further, the research questions, research design, the scope of research, and overall thesis structure are also presented in this chapter.

(ii) **Chapter two** reviews the issue of children learning with outdoor environment and the impact of the outdoor environment on children physical performances. It delineates the kindergarten playground, its purposes, types, benefits and deficiency as well as its function as a learning space to the kindergarten children. In this chapter, the theoretical concept of affordance is defined and standard requirement of local authority from Malaysia context is also identified. Finally, the prospect parameters of outdoor play spaces in kindergartens are discussed in the summary of the chapter.

(iii) **Chapter three** describes on the methodology applied through this research and its implementation. In this section, case studies are selected as the method of study with approach of multi-methods and multi-sources. It explains the relevance of conducting the process including the procedures for selection case studies, pilot case study, the process of data collection, and explain how the data are analyzed.

(iv) **Chapter four** reports and analyse on four case studies conducted. The case studies are compared based on variables and unit of analysis certified in the previous chapter.

(v) **Chapter five** then elaborates the findings. The findings scrutinized in this section to come out with the final conclusion of the study as a whole.

(vi) **Chapter six** is the ultimate chapter of the study. In this part, the indication of the research work is delivered comprehensively by summarizing the whole thesis, revisit the research questions, aim and objectives, highlight the research findings and present some potential subject to be elevated in future research. It also presents the prospect parameters of kindergarten development in Malaysia context that will be applicable across the majority of kindergarten and preschool. The recommendations anticipate assisting landscape architect when they are designing play space for kindergarten children afterward.