

## **CHAPTER 03**

### **THE RESEARCH METHODOLOGY**

This chapter examines the relevance of research methodology chosen, details of the methods and how the methods being designed to gather information. This study is about children and play space; the methodologies pertain to elicit the effects of outdoor play spaces on kindergarten children performances during play activities. The purpose of the elicitation is to find a persistent pattern of regularity of the children that encourage children to be more active when they experienced the garden (Shi, 1997). This research applies the qualitative method, with a wide range of literature review, and an exploratory evaluation of four case studies. The case studies are carried out to produce information on children play and performances in outdoor play spaces provided in kindergarten area. The children play behaviours are measured based on the Theory of Affordances introduced by Gibson (1979). This section explain the research methodology and it implementations.

### **3.1 The Methodology and Its Implementations**

The main reason for choosing a qualitative study paradigm is when the nature of a problem that has to be researched involves much exploration and where the variables are unknown from the outset (Creswell, 2003). This study employs case study as research strategy by applying phenomenological approach in collecting the evidences. Phenomenological approach is a participatory approach that a researcher participates in the children's context. Hence, this research elicits responses while the children are experiencing the landscape features (natural and man-made) of the kindergarten. The methods to obtain children's responses include direct observation and mapping of spatial pattern and children's movement, participant-observation, and focus interview with the teachers or caretakers. The Theory of Affordance (Gibson, 1979) is applied into these methods in order to find out how outdoor play environment contribute to childhood play experiences and encourages motor skill development of kindergarten children during play activities.

#### **3.1.1 Case Study**

In order to understand and examine the ability of kindergartens' landscape to afford challenging and stimulating play environments for children, case study method was chosen. This method allows the researcher to understand the complex real-life activities in which multiple sources of evidence were used. The used of case studies to investigate an area of interest in depth is particularly appropriate. Case studies elaborated as a well-documented and systematic examination of the process,

decision-making and outcomes of a project, which is undertaken for the purpose of informing future practice, policy, theory and/or education (Francis, 2001:16).

In addition, Yin (2003) defined the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used.

In framing the data collection, four case studies were examined in terms of the landscape features (natural and man-made) of the kindergarten environment and the playground equipments that arouse children behavioural responses during their play activities. The elements are categorized into groups of environment qualities which are;

- i. Flat surface (lawn, pathway, playground area, asphalt open space),
- ii. Smooth/rough surface (sand, turf, asphalt, cement, and tiles rendered),
- iii. Grasable/detached object (vegetations and animals),
- iv. Attached object (textured wall, boulders, bollard, wood edge etc.),
- v. Climbable feature (log, balance beam, rock sculpture etc.),
- vi. Shelter (open stage, hall, pavilion, shady tree, canteen, corridor, building etc),
- vii. Mouldable materials (sand, chipping, fallen leaves, twigs etc.),
- viii. Water (water feature, paddling pool),
- ix. Microclimate (thunder, rain water, sun, wind).

### **3.1.2 Observation and Mapping Technique**

Observation is one of the most common methods for qualitative data collection. It is also challenging when it requires the researcher to become a participant in the culture or context being observed. This method often involves extensive amount of time with intensive work because the researcher needs to become accepted as a natural part of the culture in order to assure that the observations are of the natural phenomenon.

According to Hart (1979) the most well-tried methodology in the study of children's relationship to the landscape is direct observation and recording of their activities. Bechtel et.al.,(1987) stressed that the ultimate goal of behavioural methods in environment behaviour research is primarily to gain insight into research questions and problems. They described observation as a method having five dimensions: behaviour, environment, time, observer and record of observation (Bechtel et. al (1987). Golicnic (2005:54) further noted that behavioural mapping is the recording technique that often supports an observation. According to Hussein (2009:85), it was developed by Ittelson et al. in 1970 to record behaviour as it occurred in the design (Bechtel and Zeisel, 1987). Ittelson et al. (1970) also explained that, behavioural mapping was developed as a technique for studying the relationships between behaviour and the physical space in which it occurs. They added behavioural mapping as thus defined as a very general technique for studying environmental influences on behaviour. The detail procedure of how the technique was conducted in this study explained in the next chapter (Chapter 4).

### 3.1.3 Participant Observation

Participant observation explores and describes the situation or experiences of people with the environment (Seamon, 2000). It is to clarify the meaning, structure and essence of the life experience of a phenomenon for a person or group of people (Patton, 2002). Participative research is thought to produce knowledge in a social constructionist way that is useful to those people whose situation is being researched, alongside the dispersal of power that ‘professional’ researchers have within more traditional research processes (Dodson and Baker, 1995). In children play setting, it seeks the experience of a child in his situated action (Greig and Taylor, 1999) constructed by him in a context. In this study, the children experience the outdoor play space in kindergarten context as their physical space. The context is a physical space, which is shaped by the children presence, so are children shaped by it (Graue and Walsh, 1995). The approach operates by eliciting the children behavioural responses experiencing the physical landscape through play and movement particularly in social play (Graue and Walsh, 1995; Moore and Young, 1978; Olds, 1989).

In order to gain children’s perceptions of their lived experience (Van Manen, 1990) during play in the outdoor play spaces of each kindergarten, a brand new approach entitled *‘My view of the playground: a participatory photographic project’* introduced by Burke (2009) in her research work has been adopted. This approach is a way to understand behaviour from the subject’s own frame of reference (Bogdan & Bicklen, 1992) or in this case, the kindergarten children. The approach was chosen with a little modification in order to attempt with how children understand and express their experiences of play in a kindergarten playground. In this study,

the approach was a participatory drawing project which obtains children participation to draw their own perceptions toward playground provided in their kindergartens.

A feature of qualitative research, as Creswell (2007) explained, is that research participant perceptions need to be considered and interpreted in kindergarten outdoor play spaces setting. Qualitative researchers tend to collect data in the field at the site where the participants experience the issue or problem under study. They do not bring individuals into a lab (a contrived situation), nor do they typically send out instruments for individuals to complete (Creswell, 2007). The kindergarten outdoor play spaces setting are an important qualitative research element which needs to be incorporated into the methodology in order to illuminate the research question (Burke, 2009).

### **3.1.4 Interviews**

Interviews seek out to describe and the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say (Kvale, 1996).

A qualitative research interview search for both a factual and a meaning level, though it is usually more difficult to interview on a meaning level (Kvale, 1996). Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to questionnaires for instance to further investigate their responses (McNamara, 2009).

In this study, interviews are conducted with the teacher and kindergarten staff to gain their opinions of children's performances in kindergartens outdoor play setting. Semi-structured interview questions are employed and listed in Appendix B.

### **3.2 Piloting the Method: Tadika Islam Taman Tun Dr. Ismail**

A pilot, or feasibility study, is a small experiment designed to test logistics and gather information prior to a larger study, in order to improve the latter's quality and efficiency. A pilot study can reveal deficiencies in the design of a proposed experiment or procedure and these can then be addressed before time and resources are expended on large scale studies. The information obtained on logistical issues should be incorporated into the main study design. As the purpose of a pilot study is to assess the feasibility of an experiment, it is very rarely sensible to present more than summary statistics of the data. In fact, the data might be irrelevant if problems with the methods are discovered.

Tadika Islam Taman Tun Dr. Ismail (TTDI), Kuala Lumpur was chosen as the pilot case study as it has the quality of criteria which was completed and operational, registered and recognised, with proper outdoor play space. It was also easily accessible with an appropriate size and was well used.

### 3.2.1 Tadika Islam TTDI and The Outdoor Play Space

Tadika Islam TTDI is an Islamic base preschool for children from range age of four to six years olds. It is managed by Majlis Agama Islam Wilayah Persekutuan (MAIWP) with collaboration of Lembaga Pengurusan Sekolah Agama which is created by the residents of the area. The school has quite a wide play area consist of playground with the play structure equipment, open space with asphalt in front of the main building, and covered area with a stage attached to the school building. There are 70 children in morning session who use outdoor play area and 24 children in the afternoon session. The researcher observed the children in the morning session as they are four to six years old children while in the afternoon session; there are only children in aged five and six. Almost all of the children use the outdoor play space at the same time during half an hour of their break time every day.



Figure 3.1 : Tadika Islam TTDI and the outdoor play space.



### **3.2.2 The initial Approach**

The researcher had never conducted the observation and behaviour mapping before and tried to ask for teachers help and cooperate so that the session could be carried out practically. Among issues raised during the discussion were the essential instruments needed, such as an accurate scale map of the area (an A3 size would be best to work with). Since the kindergarten and their management need some time to provide the layout plan of the school, the researcher decided to record the activities observed by video recorder. The observation session is conducted during the half an hour break time session.

During the on-site investigation, the researcher conducted interviews with the teachers, which involved testing a preliminary semi-structured interview questions to understand the experience in terms of children's motor skill development in outdoor playground during play activities. This set of questions also is to test out whether it can be understood by respondent.

### **3.2.3 The Difficulties Identified in Conducting The Method**

- (i) The researcher has planned that the interview session should be conducted first as the nature of this subject required a great deal of primary data collection, the need to verify information with individuals who are expert in, and knowledgeable about their own specialty, was attended to first (Hussein, 2009). However, due to school regulation and concern about their timetable, the interview session only can be held after the class session

everyday and the researcher need to draw near the teachers who are available.

- (ii) It was felt that the preliminary interview question should be refined as the teachers found it hard to grasp. As a result, it had to be explained in more detail.
- (iii) There was an uncertainty in the timescale of users' activity and the optimum extent of the duration of observation. The researcher tend to record and note almost all activities during 30 minutes of break time which the children have to perform their routine such as be in queue to the canteen, recite the prayer before taking meal together, take their breakfast, and brush their teeth before they are allow to do free activities and plays.
- (iv) On the first day in the school, the teacher introduced the researcher as the new staff and will be doing some research in the school area. The intention was so that the researcher would be regarded as a common member in the school among the children and therefore could easily move about around the school area without surprising and intimidating them. Yet, the head of the school asked the researcher to dress like the teacher so that the children will not find puzzled. However, the children kept on coming to the researcher during the observation and asking on what the researcher was doing. This became a constraint to the researcher to conduct the observation naturally and smoothly.

### **3.2.4 The Modification Made to The Methodology and Approach**

- (i) The sequence of the method: In this study, interviews will be conducted with the landscape architects (if the school play area was designed by the experts), and followed by the teachers. Subsequently followed by a systematic series of observations and behaviour mapping.
  
- (ii) The approach: The interview question were simplified into structured interviews and made into two sets, i.e. one sets for the landscape architects, one set for the teachers and staff.
  
- (iii) The timescale of observation: By reference to Golicnic (2005) and Hussein's work (2009), it was decided to have four timescales to record the user's activities, i.e. less than 1 minute, 1–2 minutes, 2–5 minutes, and more than 5 minutes. In order to avoid too much data packed into the one scaled base plan, Hussein (2009) further noted that, it was planned to conduct the observation and behaviour mapping over thirteen separate thirty-minute periods, on different days, and at different times of the day. Therefore, careful planning and time management was needed in executing this data gathering.

### **3.3 The Case Study Selection**

Preliminary visits were done to seven kindergartens in area of Petaling Jaya before determine the case studies. The kindergartens visited were based on three criteria which were (i) completed and operational, (ii) the spatial location (iii) accessibility. The visits support to conception of research design and selection of cases.

For the purposes of this study, it was necessary to choose kindergarten with appropriate spatial layout of outdoor play space which assimilated to the school building. The potential site was investigated on the design process that had been undertaken and the constraints which they had to overcome, before being considered for study cases. The potential final case studies were short-listed based on criteria mentioned earlier:

i. Completed and operational.

The kindergartens' outdoor play area in these case studies had to have been completed and operational, in terms of the outdoor properties and activities they were offering.

ii. The spatial location

It has to be considered that the spatial location of the playground or any outdoor play area in the school were assimilated to the school building in order to find out whether this aspect would influence how users utilized the area, whether this factor was likely to result in high use levels and whether the design were taking that aspect of accessibility into account.

iii. Accessibility.

The availability of information about the chosen case studies and easy access to them were important.

From seven kindergartens visited in preliminary site studied, four of them were appropriate to be selected as final case studies as they had significant criteria to be compared and analysed. The final case studies were selected based on four major categories which were explained in Table 4.1 (Chapter 4). The certain kindergartens are Tadika Islam Taman Tun Dr. Ismail, Tadika Diyana, Tadika University of Malaya and Tadika Kemas Kenari. The pilot study which was onto Tadika Islam TTDI also considered as a final case study since it approved the method of application. The kindergartens were situated in the Petaling Jaya district of Selangor which was considered as a satellite township for Kuala Lumpur. Petaling Jaya comprises mostly by residential and some industrial areas. In general, the development of kindergartens was determined by local authority based on population requests.

### **3.4 Summary**

The research methodology of this study applies a phenomenological approach to elicit the relationship of kindergarten children (aged 4 to 6 years old) with the landscape features (natural and man-made) of the four different setting of kindergartens' outdoor play spaces offered. The research methodology is created and modified based on implication of the feasibility study completed. It derives the

cause-and-effect of issue that happens in kindergarten which restricts the environment from teaching our children naturally through their self-exploratory elements by offering outdoor play spaces as a ground to play and learn. The case studies are carried out to produce information on children play and performances in outdoor play spaces provided in kindergarten area. The children play behaviours are measured based on the Theory of Affordances introduced by Gibson (1979) and this section explains how the case studies implement the methodology onto four selected cases with different setting.