

APPROPRIATING AFFORDANCES FOR LEARNING THROUGH PLAY IN  
INDOOR PHYSICAL ENVIRONMENT OF MALAYSIAN PRESCHOOLS

PEARLY LIM PEI LI

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Dedicated to:  
mum and dad, for believing in the beauty of my dreams;  
jade, for dreaming with me;  
and  
boon soon, for keeping my dreams alive.

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## ABSTRACT

The National Preschool Curriculum (NPC) of Malaysia introduced ‘Learning through Play’ (LTP) as a pedagogy for preschools. However, for holistic growth, quality built environment planned in alignment with principles of LTP in preschools should be emphasized. Theory of affordances was utilised whereby existence of affordance within physical environment creates potential for actualization and is independent of users, namely children. Focussing on private preschools within converted terrace houses which represent the biggest percentage of cases in Malaysia, it was found that enhancement of learning environments reflecting LTP has yet to be addressed. The study aimed to identify appropriate affordances for adaptation within indoor environment of preschools through perceptual study. The first objective examined application of available affordances and physical environment characteristics through four case studies of private preschools within converted terrace houses in Johor Bahru, selected through homogeneous purposive sampling. Data was collected through participant observation. The second objective was to discern parents’ and teachers’ perception on LTP, existing and ideal physical environment, and to discern children’s favourite play themes. Objective three sought similarities and differences between perceptions of teachers, parents and children. For objectives two and three, 20 teachers and 16 parents, selected through convenience sampling responded to a 5-point Likert-scale questionnaire survey. Participatory drawing and story-telling were obtained from 43 preschoolers selected through probability sampling. Statistical methods were used for quantitative data, while children’s drawings were coded. Qualitative data were analysed through thematic network and domain analysis. Findings suggested that appropriate characteristics for adaptation based on similarities in perception between the three groups included variety of materials and equipments, places for personalization, provision of challenges, good indoor and outdoor connection and opportunities for social interaction. The findings may open up the possibility of future studies on principles of designing for LTP in Malaysian preschools.

## ABSTRAK

'Belajar Melalui Bermain'(LTP) diperkenalkan dalam Kurikulum Prasekolah Kebangsaan (NPC) Malaysia sebagai salah satu pedagogi prasekolah. Namun, bagi pembangunan holistik, persekitaran prasekolah berkualiti sejajar dengan prinsip LTP perlu diterapkan. Teori 'affordances' digunakan di mana wujudnya sesuatu 'affordance' dalam persekitaran fizikal melahirkan potensi untuk digunakan. Fokus pada prasekolah swasta yang diadaptasi dari rumah teres dan mewakili peratusan kelas terbesar di Malaysia menunjukkan bahawa penekanan peningkatan kualiti persekitaran fizikal sebagai gambaran LTP masih kurang. Kajian ini bertujuan mengenalpasti 'affordances' yang sesuai untuk diadaptasi di prasekolah melalui kajian persepsi. Objektif pertama mengenalpasti penggunaan 'affordances' dan ciri-ciri fizikal yang tersedia ada di empat prasekolah swasta di sekitar Johor Bahru yang dipilih melalui persampelan bertujuan. Objektif pertama dicapai melalui pemerhatian peserta. Objektif kedua bertujuan mengkaji persepsi ibu bapa dan guru terhadap LTP, persekitaran fizikal sedia ada dan persekitaran yang dianggap bersesuaian, serta tema permainan kegemaran kanak-kanak. Objektif ketiga bertujuan mengkaji persamaan dan perbezaan persepsi ketiga-tiga kumpulan tersebut. Bagi mencapai objektif kedua dan ketiga, maklum balas 20 orang guru dan 16 ibu bapa yang dipilih melalui persampelan mudah dikumpul melalui borang soal selidik berskala Likert 5-mata. Lukisan dan sesi bercerita diperoleh daripada kanak-kanak prasekolah yang dipilih melalui persampelan kebarangkalian. Statistik digunakan untuk data kuantitatif dan lukisan kanak-kanak dikodkan. 'Thematic network' dan analisis 'domain' digunakan untuk analisis data kualitatif. Berdasarkan persamaan persepsi antara tiga kumpulan tersebut, hasil kajian mencadangkan ciri-ciri yang sesuai untuk penyesuaian prasekolah merangkumi peyediaan pelbagai peralatan, tempat persendirian, penyediaan cabaran, hubungan ruang dalaman dengan luaran yang baik dan tempat untuk interaksi. Kajian ini diharap dapat memupuk kajian masa depan berkenaan prinsip reka bentuk untuk LTP untuk diadaptasi di prasekolah Malaysia.

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## GLOSSARY

**Affordances:** Operationally, the concept of affordances implies perceived functional significance of an object, event or place for an individual. In the context of this study, the term affordances include the relation between an object or an environment and the individual which affords the opportunity for that individual to perform an action. For example, relatively smooth slopes affords rolling, sliding, running down and rolling objects down.

**Early Childhood Care and Education (ECCE):** Establishment offering care and education for children of pre-school age ranging from birth to ages before entry to primary school in formal, informal and non-formal settings.

**Physical Indoor Environment:** Used in reference to part of the human environment that includes purely physical factors within a building. In the context of this study, the term physical indoor environment denotes the physical components of the area within preschools rather than out of doors in which children learn and play.

**Preschool:** Early childhood care and education establishment offering education to children between four to six years old.

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 Introduction**

Chapter 1 looks into background of the study, research gap and agenda, research scope as well as the significance of the study. A brief introduction to the methodology used in this study is also presented in this chapter. This chapter concludes with an overview of the overall structure of the study and a summary of the chapter.

#### **1.1 Background of Study**

As eager and curious learners, young children gain an understanding of themselves and the world around them from all experiences in their daily lives through active investigation. This notion has been championed by many pioneers of early childhood care and education as research has it that before the age of six, children “only learn through experience – by doing – never through commands” (Day and Midbjer, 2007). Indeed, while genes provide a blueprint in life, the National Scientific Council on the Developing Child (2010) at Harvard University

states that it is the early environments in which children reside that leaves an enduring signature on those genes.

Different types of play have found to be vital in developing the different aspects of children learning domains. For instance, self-directed play especially make-believe play allows children to express their innermost thoughts and other emotions. In essence, a child's learning and social developments as well as future wellbeing are affected by the extent and the quality of their physical environment and opportunities for play and exploration. This notion has been championed by various early educationists from Vygotsky, Piaget, Froebel, and Montessori to Malaguzzi; providing a stronghold that a child's learning and development happens through play. As both parents in the twenty first century are often found working, a vast majority of young children's waking lives are spent confined in preschool settings. This makes the quality of physical environment within this settings utmost crucial.

Nevertheless, predicted around narrow health and safety agenda without proper guidelines on the quality of built environment in preschools, most young children's environments are constrained within settings that do not typically allow sufficient resources to be devoted for learning through play. Penn (2005) asserted that:

In many ways children are marginalized, isolated, exploited, belittled and confined as never before.

(Penn, 2005:193)

She noted that restricted by health and safety agenda, the quality of independent imaginative play and exploration which is an integral part of children's development has diminished due to the need for constant adult surveillance. This matter is further aggrieved as with technological flourishment in the last decade, children from all ages and socioeconomic background have been observed to prefer spending time indoors watching television, playing video games and battery-operated toys. Not only does the tendency for them to stay indoors with electronic gadgets leave them developmentally deprived, learning solely through books and

technological devices in preschools has left children's experiences of the world second-hand.

While the National Preschool Curriculum (NPC) of Malaysia introduced 'Learning through Play' as one of the major teaching and learning approaches for preschools, a review of the Early Childhood Care and Education (ECCE) Policy and Implementation (2008) found that 'Learning through Play' (LTP) barely happened in classrooms, as opposed to teachers' claim when interviewed. Nevertheless, aspects of the physical environment in bolstering learning through play were not mentioned. While the paradigm of early childhood education shifts to include a more holistic curriculum, so should the design of learning environments. Yet, by and large, most private preschools seen mushrooming around Malaysia are often adapted from residential houses, owing to the lowest common denominator as one size fits all approach with insufficient space for imaginative play and exploration stifles children's cognitive growth. Dudek (2005) takes this concern and reiterates that:

In the worst cases they adopt a quaint adult perception of what children's architecture should be; this then is 'bolted onto' the building as something of an after-thought, perhaps with the use of very explicit childlike references such as teddy bear door handles or decorations which are over elaborate, or perhaps by utilizing strident primary colours which are aesthetically poor.

(Dudek, 2005: xvi)

He further reiterates that children's environment must be a unique place with aspects integral in making the environment a rich landscape for play and exploration, envisioned of as a world within a world.

Learning environment for young children should emphasize on quality built environment that are not only planned in alignment with the vision and principles of learning through play but also takes into consideration children development psychology in building interior supportive spaces and external environmentally stimulating spaces for a holistic growth. As Shier (1984) asserted, our concern should be the redesigning of the environment as a whole, including the restructuring

of society to ensure children's needs are acknowledged and catered for in all aspects of community life.

In the Malaysian context, while research on the significance of play in children's learning and development has been aplenty, enhancing the learning environment as a reflection of learning through play as prescribed in the National Preschool Curriculum (NPC) have yet to be fully addressed and found to be wanting - more so in the context of converted residential building. While the guidelines for the establishment of early childhood care and education in Malaysia outlines the type of buildings approved for conversion into preschools, little has been mentioned on the physical environment settings indoors. Thus this study posited that efforts made in pedagogical shifts seen in the NPC should be paralleled with the learning environment in preschools within Malaysia. In order to ensure that the learning environment within preschools are facilitative instead of deterministic, understanding of appropriate affordances for the indoor environment of preschools within converted residential buildings to promote learning through play is crucial in expanding the possibilities of learning for young children.



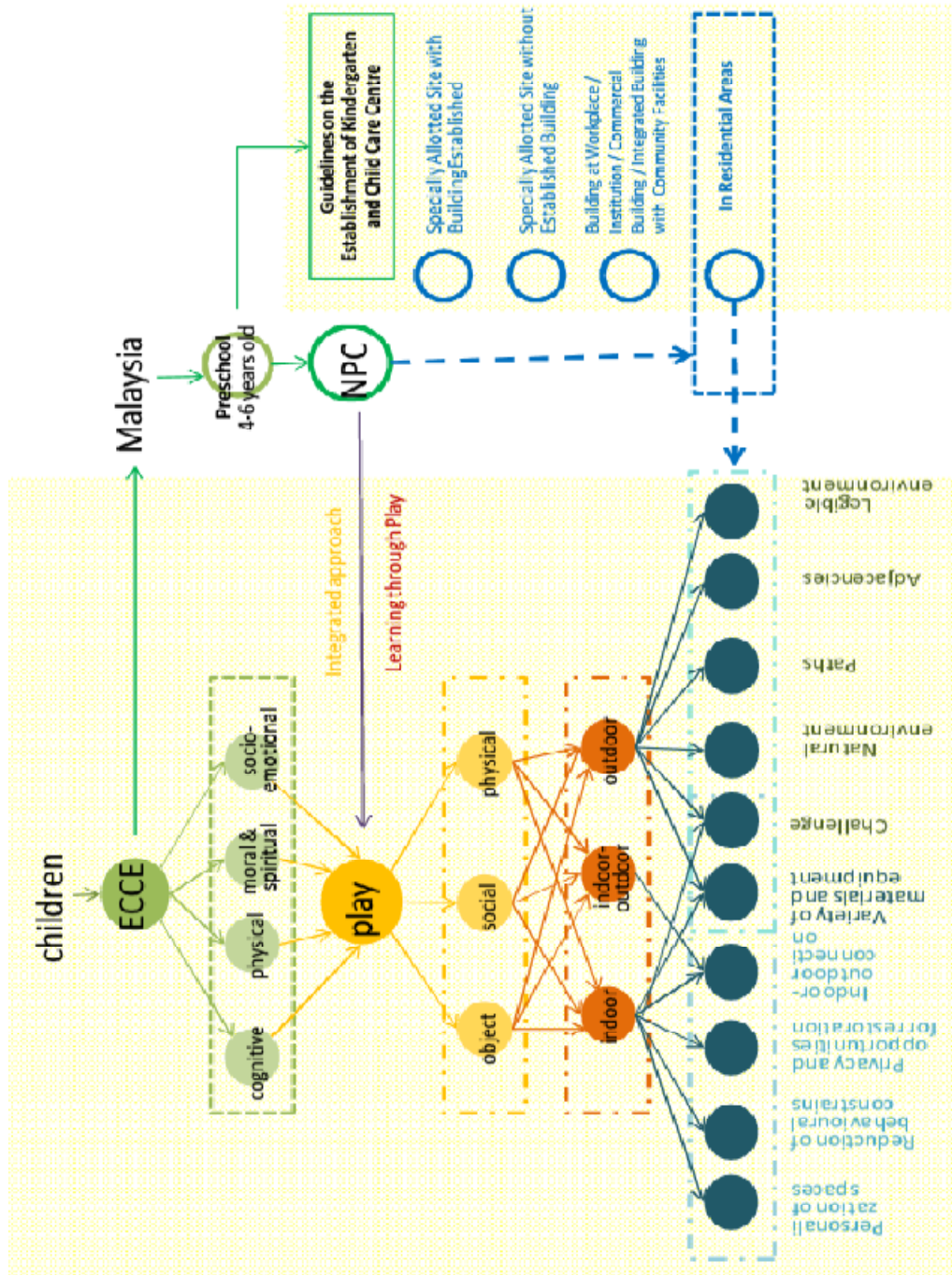


Figure 1.1: Background of Study Flow Chart. (Source: Author)

## 1.2 Research Gap

While there has been resounding researches on the importance of play in children's learning and development as well as numerous studies on environmental psychology on characteristics and design strategies deemed crucial for physical environment in preschools, these studies were conducted as independent researches without probing deeper into linking the possibility of how affordances and characteristics of indoor physical environment within preschools are able to enhance learning through play. Besides, play has been commonly been viewed synonymous with outdoor environment and thus emphasis of environments for play has been conducted predominantly on outdoor settings of preschools.

Owing to these factors, this study posited that present and ideal affordances of the physical environment in preschools should be understood from the perspective of teachers, parents and children in order to identify appropriate affordances for adaptation into preschools in Malaysia. In a bid to make certain that these affordances and physical environment characteristics are facilitative instead of deterministic, the theory of affordances was utilised whereby existence of affordance within the physical environment creates potential to be actualized and is independent of the users.

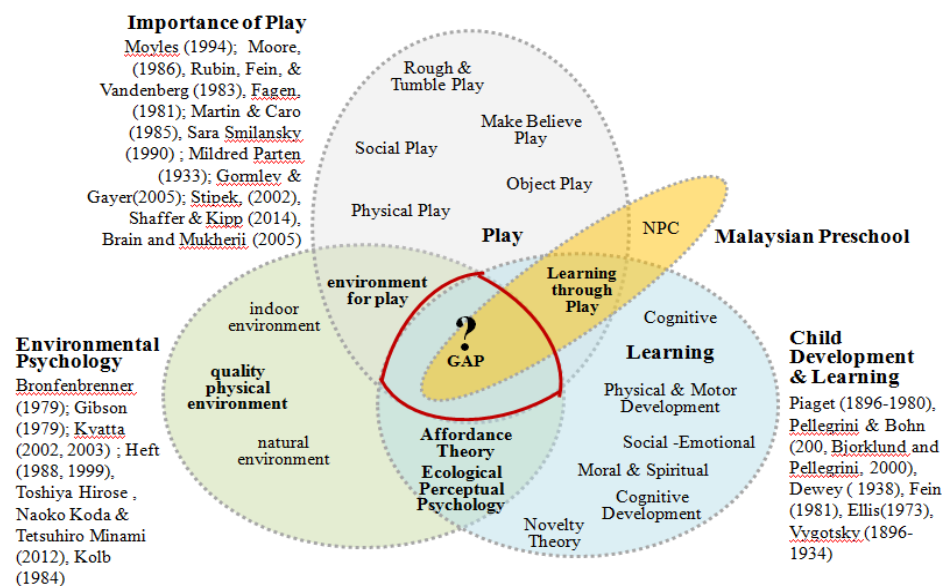


Figure 1.2: Theoretical Framework. (Source: Author)

This research thus addresses the aspects of affordances for learning through play and how the indoor physical environment can be adapted to enhance learning environment of Malaysian preschools within converted residential buildings based on the examination of parents, teachers' and children's' perspective on play, conducted through a perception study of various criteria perceived appropriate for learning through play.

### **1.3 Research Agenda**

#### **1.3.1 Research Aim**

The aim of the research is to identify appropriate learning through play affordances and physical environment characteristics for adaptation within existing indoor environment of preschools in Malaysia. Identification of appropriate affordances are based on the examination of parents, teachers' and children's' perspective on play, conducted through a perception study of various criteria perceived appropriate for learning through play, centered on the indoor environment of preschools in converted residential buildings.

#### **1.3.2 Research Questions**

The three key themes which were assumed to arise from the research include understanding of indoor environment facilities for play in relation to teaching and learning in various preschool context, understanding parents' and teachers' perception of present and ideal physical environment for learning through play and children's favourite play elements. Hence, the thesis addresses the following research questions:

1. How are available affordances and physical environment characteristics of indoor play applied in learning within Malaysian preschools?

2. What are teachers' and parents' perception on LTP, their existing and ideal perception of physical environment characteristics deemed appropriate and what are children's favourite play themes?
3. What are the similarities and differences between parents', teachers' and children's perception of appropriate ideal physical environment characteristics and corresponding affordances for learning through play?

### **1.3.3 Research Objectives**

Towards the end, this research would have fulfilled the following objectives:

1. to examine application of available affordances and physical environment characteristics for learning through play(LTP).
2. to discern parent's and teachers' perception on LTP, their existing and ideal perception of physical environment characteristics deemed appropriate and to discern children's favourite play themes.
3. to identify similarities and differences between parents', teachers' and children's perception of appropriate ideal physical environment characteristics and corresponding affordances for LTP.

### **1.4 Significance of the Study**

With reference to the research gap discussed, there is a need to analyse and identify design strategies through the understanding of affordances and physical environment characteristics which are perceived as significant in aiding learning through play within the indoor environment of Malaysian preschools. This is because reviews of literature from journals, books, seminar papers and policies on Early Childhood Care and Education (ECCE) in Malaysia were predominantly concentrated on pedagogical, health and learning outcome of young children. At

present, available researches and related literature on childhood education, existing regulatory implementation and the Malaysian culture were discussed independently as isolated programmes. Nevertheless, a concise study on the impact and linkage between learning through play as a pedagogy approach and the physical environment characteristics in support of the pedagogy is seen as an enhancement and should be given due attention in contributing to the creation of a more coordinated and holistic childhood education setting in Malaysia.

In essence, this research is constructive in the creation and enhancement of indoor environment which supports the importance of play in children's learning experiences. Along with the main aim and objectives stated, it is hope that within the domain of architectural, interior and private preschools establishment, the stimulation of design strategies for aiding learning through play within the indoor environment of preschools would encourages better understanding of key issues contributing towards a comprehensive planning in alignment with the vision and principles of learning through play. In this sense, the findings and outcome of the research would contribute significantly in the subsequent ways:

- i. promote a positive change in attitude and interest regarding ECCE as a place where holistic children development can be attained through the implementation of supportive quality environment for learning through play
- ii. enrich literature concerning design strategies for play and approaches in assisting teachers and educators in planning and implementing appropriate design intervention deemed crucial in enhancing children's learning experience indoors.
- iii. provide comprehension on the possibility of enhancing current indoor environment of Malaysian preschools within converted residential buildings through the adaptation of various affordances and physical environment characteristics found to be appropriate. In essence, this research is constructive in the creation and enhancement of indoor environments which supports the importance of play in children's learning experiences.

## **1.5 Research Scope**

The research focussed on identifying appropriate learning through play affordances and physical environment characteristics for adaptation within the indoor environment of preschools in Malaysia, based on the present and ideal environment for learning through play examined through a perceptual study examination conducted with parents, teachers and children. The scope of this research was limited to the following:

- i. background study on design strategies constituting towards quality built environment in support of children's play through review of journals and books.
- ii. case studies of sampling of private preschools in Johor Bahru, Malaysia.
- iii. proposed list of physical environment characteristics and corresponding affordance for learning through play based on sampling perception of teachers, parents and children of the selected preschools in Johor Bahru, Malaysia.

## **1.6 Research Methodology**

To identify appropriate learning through play affordances and physical environment characteristics for adaptation within the indoor environment of preschools in Malaysia, the development of a cohesive methodology is crucial to tie the overarching themes of learning through play and the appropriate affordances for inclusions within the physical environment of preschools. The research strategy employed was mixed methodology culminating in a quantitative cum qualitative research to identify similarities and differences between parents', teachers' and children's perception of the ideal indoor physical environment characteristics for learning through play in Malaysian preschools.

These data became the basis by which a comprehension of the significant criteria and type of adaptation perceived crucial in aiding learning through play was

garnered. Analysis of these perceptions were then utilized to formulate to identify themes which were related to the study and affordances which could be assimilated into preschool settings in order to enhance the indoor physical learning environment.

In establishing assumptions prior to the study, the research was situated within the emancipatory paradigm to situate the nature of reality and to determine how reality was comprehended in the research to ensure that the strategies and tactics employed were consistent with the situated paradigm. To comprehend affordances for learning through play in preschools, the ontological assumption was skewed towards an objective approach whereby reality is seen as a contextual field of information. Assumptions on human nature were skewed towards the subjective approach whereby the with the researcher assumed that humans created their own realities.

This view was taken in line with Gibson's (1979) Theory of Affordances and Kyttä's (2003) distinction of the categories of affordances with emphasis based on reciprocal relationships between the perceiver and the functional properties of the environment. Here, available affordances connote cues offered by the environment and perceived by children and teachers (reality as a contextual field of information) while actualised and shaped affordances are opportunities taken up and modified by individuals based on their perceptions (humans create their realities).

The research also engaged aspects of the following research methods:

- Opinion research – perception and appraisals of parents, teachers and children with respect to the research issue was sought through the use of questionnaires and interviews.
- Empirical research – recording of researcher's direct observations and experience rather than through theories through participant observation in the selected case studies.
- Analytic research – utilizing critical thinking skills through internal logic to solve problems and bridging issues without explicit reference to other external sources where applicable.

Analyses of data obtained were interpreted into conceptual models to be compared for similarities and differences between the perception of parents, teachers and children. Literature review relevant to the subject matter was employed throughout the research. Based on literature review and the outcome of the data analyses, the research prospected five general affordances and physical environment characteristics which were deemed appropriate by teachers, parents and children which are applicable for adaptation within various preschool environments indoors.

## **1.7 Research Structure**

The thesis consists of seven chapters. Chapter 1 consists of the background information and elaboration of the research gap, leading to the aim of the research. Three research questions that required probing were identified and their objectives outlined. Significance of the research was discussed and the scope of study was determined. Research methodology employed was briefly introduced in this chapter.

Chapter 2 reviews related literature with reference to elements central to the study. This was then followed by the various types of play as well as spaces in support of play. The chapter covers literatures on the importance of early intervention, children's learning and development domains, the importance of play, types of play and characteristics of quality physical environment for play and the theory of affordances. Six physical environment characteristics which contributed towards learning through play were also identified in this chapter. This chapter also introduced 'Learning through Play' as a pedagogy within the National Preschool Curriculum of Malaysia and reviews significant ECCE policies in Malaysia as well as guidelines for the implementation and establishment of ECCE.

Chapter 3 highlights the detailed methodology employed in the research. It clarifies the research paradigm, research strategy and various research tactics employed as well as the methods for acquiring data defining them as research tactics in this research. This chapter also presents steps taken in the implementation of the



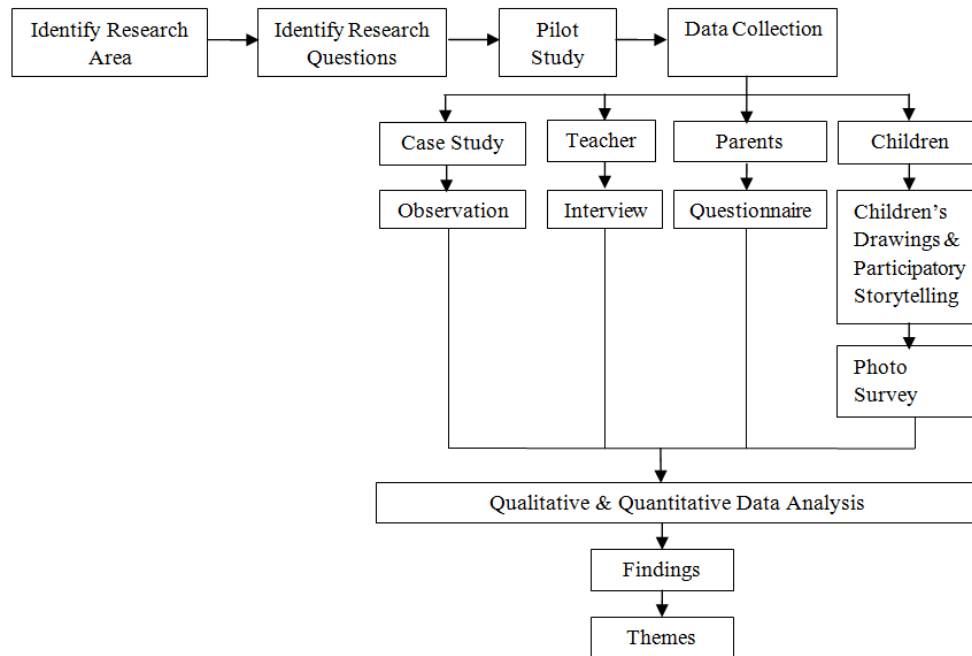
research through the use of various operational tactics and the development of instruments employed throughout the research. The stages of the research from the background stage to the development and establishment of the proposed appropriate affordances for adaptation in Malaysian preschool are also presented in this chapter.

Chapter 4 presents the data collected from the case studies through participant observation to obtain the first research objective. This chapter examines the application of available physical characteristics for learning through play in the selected case studies. The findings for this chapter were distributed into three sections which include a profile summary of the case studies, available physical characteristics within the respective preschools as well as potential and actualised affordances for learning through play.

Chapter 5 discusses looks into the analysis of data obtained through the various operational tactics employed in the data collection phase and will be discussed in four sections. The first section discerns teachers' perception on learning through play as well as their present and ideal perception of physical environment deemed appropriate in preschools which were gained through questionnaire survey. This section is ended with issues concerning learning through play and the physical environment for play that were gathered from unstructured interview with principal's of the respective preschools as well as teachers' open-ended comments in the questionnaire. Parent's responses are presented in the second section. The third section presents the correlation analysis between teachers' and parent's response. Analysis of children's participatory drawing and storytelling are presented in the fourth section in order to determine children's favourite play themes.

In Chapter 6 delves into the results obtained from data analyses presented in prior Chapters 4 and 5 in addressing the research questions stated in Chapter 1. Discussion will be centered on themes generated from the data analyses and presented in subdivided topics to address the research questions, objectives and aim. The results obtained identified appropriate affordances based on parents, teachers' and children's' perspective on play, conducted though a perception study of various criteria perceived appropriate for learning through play, centered on the indoor environment characteristics of the case studies. This chapter is concluded with the

implication of the research. Lastly, Chapter 7 presents the conclusion of the study. Limitations of the study and recommendations for future research are also presented in this chapter.



**Figure 1.3:** Research Methodology Framework. (Source: Author)

## 1.8 Summary

Chapter 1 probed into the background of the research issues that lead to the construction of the research gap. Justification of the research gap was further discussed, rationalizing the need for conducting the research. The research agenda then highlighted the aim and objectives of the research. Research questions were then generated to enquire into the research gap in relation to identify appropriate affordances and physical environment characteristics for adaptation within the indoor environment of preschools in Malaysia. Significance of conducting the research was then put forth with the scope of study and limitations defined. The research methodology employed with an introduction to the emancipatory paradigm adopted in the research was brought forth together with other pertinent research methods before presentation of the research structure which concludes this chapter.

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