

AFFORDANCES OF HOME-SCHOOL JOURNEY AS A PLAY AND LEARNING
ENVIRONMENT FOR RURAL MIDDLE CHILDHOOD CHILDREN

NOOR AIN YATIMAN

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Master of Architecture

Faculty of Built Environment
Universiti Teknologi Malaysia

MARCH 2014

Specially dedicated to
my beloved husband, Mohd Hafiz Mohd Sehat;
my little princess, Qayla Arissa and
my parents, Yatiman Selamat and Saripah Kamis.

ACKNOWLEDGEMENT

Thanks God, finally I had finished my study.

In preparing this thesis, many people have contributed toward my understanding. In particular, I would like to express my sincere appreciation to my main thesis supervisor, Assoc. Prof. Dr. Ismail Said, and my research grant partner, Nor fadzila Aziz for encouragement, guidance, critics and support. Without their continued support and interest, this thesis would not have been the same as presented here. I am also very thankful to the villagers of Kampung Sri Gunung Pulai for all the help and support during the data collection and also to the members of Greenovation Research Group for all help on the time spent in the lab.

I am also indebted to Universiti Teknologi Malaysia, UTM, for funding my Master study under the Research University Grant Scheme (Q.J 13000.7121.00H58). I am also very thankful to Mybrain15 for supporting my studies in UTM.

My sincere appreciation also extends to my family especially to mom and dad for their endless blessing and support encouraged me to continue my studies. Lastly, thanks to my husband for the continuous support and encouragement throughout the years.

ABSTRACT

Outdoor environment has been recognised as the most significant place for children's performances. However, children opportunities for outdoor activities have gradually declined in the past two decades. Generally, children spent most of their times in school and they did not have equal amounts of free time before and after the school period to engage in outdoor activities. The journey to school has been recognized as a place for children to engage with outdoor activities. However, there is lack of concern in children's performance in the home-school journey especially in rural area. Hence, this study investigates the affordances of home-school journey for children's performance in a rural area. The study was conducted at a village of Kampung Sri Gunung Pulai, Johor, Malaysia. A total of 54 middle childhood children, aged 9 to 11 years old, participated in the survey by sharing their home-school journey experiences through drawing, semi-constructed interview and participant observation. The sets of data were analysed using content analysis and were triangulated to build a coherent justification of the children's performance. The result revealed that the children were highly engaged with perceived affordances compared to utilised and shaped affordances due to the limited time spent on the journey. They were highly engaged with natural elements more than built elements. The positive affordances, as perceived, utilised and shaped by the children, were six times more than negative ones. The study concluded that the home-school journey is important for the children performance and mobility that allowed them to interact with natural elements and permitted them to be physically, socially and cognitively active.

ABSTRAK

Persekitaran luar merupakan ruang yang penting bagi kanak-kanak. Namun sejak kebelakangan ini, peluang untuk kanak-kanak menjalankan aktiviti di luar semakin berkurangan. Kebanyakan masa mereka diluahkan di sekolah dan mereka tidak berpeluang untuk menjalankan aktiviti di luar sebelum dan selepas waktu persekolahan. Oleh itu, laluan perjalanan kanak-kanak ke sekolah telah dikenalpasti sebagai ruang untuk kanak-kanak menjalankan aktiviti luar. Walau bagaimanapun, tidak banyak kajian yang mengkaji tingkah laku kanak-kanak semasa di dalam perjalanan ke sekolah terutamanya di kawasan luar bandar. Oleh itu, kajian ini bertujuan untuk mengenal pasti *affordances* bagi laluan perjalanan ke sekolah dan kesannya terhadap tingkah laku kanak-kanak. Kajian telah dijalankan di Kampung Sri Gunung Pulai, Johor, Malaysia. Lima puluh empat orang pelajar berumur 9 hingga 11 tahun, telah terlibat di dalam kajian ini dan berkongsi pengalaman mereka disepanjang perjalanan ke sekolah melalui lukisan, temubual dan pemerhatian berpartisipasi. Data yang telah dikumpulkan dianalisis secara analisis kandungan. Hasil kajian menunjukkan kanak-kanak lebih banyak melibatkan diri dengan dengan *perceived affordances* kerana masa yang terhad. Mereka juga lebih melibatkan diri dengan elemen semulajadi berbanding dengan elemen buatan manusia. *Positive affordances* seperti melihat, menggunakan dan membentuk direkodkan enam kali ganda lebih daripada *negative affordances*. Kesimpulannya persekitaran ruang perjalanan ke sekolah merupakan ruang yang penting bagi kehidupan kanak-kanak di mana mereka berpeluang untuk melibatkan diri dengan elemen semulajadi dan aktif dari segi fizikal, sosial dan kognitif.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	v
	DEDICATION	vi
	ACKNOWLEDGEMENT	vii
	ABSTRACT	viii
	ABSTRAK	ix
	TABLE OF CONTENTS	x
	LIST OF TABLES	xiv
	LIST OF FIGURES	xv
	LIST OF APPENDICES	xvii
1	INTRODUCTION	18
	1.1 Introduction	18
	1.2 Statement of problems	20
	1.2.1 The declining of opportunities for outdoor play	21
	1.2.2 Children's disconnection from nature	22
	1.3 Research gap	23
	1.4 Aim and objectives of study	25
	1.5 Research questions	26
	1.6 Scope and variables of study	27
	1.7 Significances of study	28
	1.8 Limitation of study	29

1.9	Structure of thesis	29
2	CHILDREN EXPERIENCING OUTDOOR ENVIRONMENT	32
2.1	Introduction	32
2.2	Home-school journey	33
2.2.1	Children's mobility	34
2.3	Middle childhood children	36
2.3.1	Middle childhood's development	37
2.4	Meaning of play	41
2.4.1	Types of play	41
2.4.2	Children's behavior in play	43
2.4.3	Roles of play in children's performance and learning	44
2.5	Children's experience of outdoor environment	45
2.5.1	Types of experience with nature	47
2.6	Theory of affordances as underpinning	48
2.6.1	The Theory of Affordances	49
2.6.1.1	Level of affordances	50
2.6.1.2	Types of affordances	51
2.6.1.3	Taxonomy of affordances	51
2.7	Conclusion	53
3	METHODOLOGY	54
3.1	Introduction	54
3.2	Research design	55
3.2.1	Phenomenological approach	55
3.2.2	Variables of the study	56
3.2.2.1	The study site- selection criteria for study site	57
3.2.2.2	Types of mobility	59
3.2.3	Data collection strategies	59
3.2.3.1	Sampling strategy and size	62
3.2.3.2	Middle childhood children as unit of analysis	63

3.2.3.3	Protocol and rules applied before the data collection	64
3.2.3.4	Handling the respondent: care and precautions	65
3.2.3.5	Measurement and procedure	66
3.2.3.6	Equipments and tools	68
3.2.3.7	Limitation and implication of method	69
3.2.4	Reliability and validity	70
3.3	Data analysis	71
3.3.1	Descriptive analysis	71
3.3.2	Content analysis	73
3.4	Conclusion	74
4	FINDINGS AND DISCUSSION	75
4.1	Introduction	75
4.2	Factors influence children's affordance of home-school journey	76
4.2.1	Properties and attributes of home-school journey	80
4.2.1.1	Properties and attributes of natural elements	81
4.2.1.2	Properties and attributes of built elements	85
4.2.2	Children's mobility to school	86
4.2.2.1	Children with independent mobility	87
4.2.2.2	Children with dependent mobility	90
4.3	Children's activities on home-school journey	91
4.4	Children's performance on home-school journey	92
4.5	Affordances of home-school journey	97
4.5.1	Level of affordances	97
4.5.1.1	Perceived affordances	99
4.5.1.2	Utilised affordances	100
4.5.1.3	Shaped affordances	101
4.5.2	Taxonomy of affordances	102
4.5.3	Types of affordances	111
4.5.3.1	Positive affordances	113
4.5.3.2	Negative affordances	114

4.6	Conclusion	116
5	CONCLUSION	117
5.1	Introduction	117
5.2	Home-school journey as an outdoor environment for children	118
5.2.1	Properties and attributes of home-school journey	119
5.2.2	Children's mobility to school	119
5.3	Implication for design and planning of children's environment	121
5.4	Scope for future research on home-school journey setting	122
5.4.1	Studies on more extensive variables	122
5.4.2	Studies of affordances of home-school journey for different age group	123
5.4.3	Studies on affordances of home-school journey in urban area for comparison	123
5.5	Theoretical implication	124
5.6	Conclusion	126
	REFERENCES	127
	APPENDIX A-L	136

LIST OF TABLES

TABLE NO.	TITLE	PAGE
1.1	Previous studies on children experiencing home-school journey	24
2.1	Summary of middle childhood children development	37
2.2	Children's development in ecological systems	40
2.3	Children's play	42
2.4	Roles of play in children's development	45
2.5	Functional taxonomy of children's outdoor environment	52
3.1	Children's mobility to school	59
3.2	An example of measurement approaches on the studies of children's environment	61
3.3	Equipment for the survey	69
3.4	An example of interview responses detailing children's experience along the home-school journey	73
4.1	Types of natural elements in children's play and learning	84
4.2	Types of built elements in children's play and learning	86
4.3	Children's activities on home-school journey	91
4.4	Children's performance on home-school journey	96
5.1	Taxonomy of affordances	125

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
1.1	The formulation of problem statement	20
1.2	The children's routine place	23
1.3	The relationship between three aspects of children's performance in home school journey	27
1.4	Thesis structure	31
2.1	Bronfenbrenner Ecological Theory	39
3.1	Framework of the study on home-school journey	57
3.2	Layout of Kampung Sri Gunung Pulai	58
3.3	Children in drawing and interview session	67
3.4	A drawing with real elements, done by a boy, aged 9	72
3.5	A drawing with imagined and real elements, done by a boy aged 11	72
4.1	Ain's home-school journey (nine affordances)	76
4.2	Ana's home-school journey (eleven affordances)	77
4.3	Adam's home-school journey (eleven affordances)	78
4.4	Hilmi's home-school journey (five affordances)	78
4.5	Children's affordances based on different physical setting and travel mode	79
4.6	Pattern of children play with elements of home-school journey	80
4.7	Affordances in independent and dependent mobility	87
4.8	Level of affordances based on children's mobility	88
4.9	Children's performance along home-school journey	93
4.10	Helping peer on the journey to school	95

4.11	Level of affordances of home-school journey in a village	98
4.12	Perceived affordances of home-school journey in a village	99
4.13	Utilised affordances of home-school journey in a village	100
4.14	Taxonomy of affordances of home-school journey in a village	102
4.15	A small shop affords children buying snacks and meals	103
4.16	Children take a rest at a sculpture	104
4.17	Mus's experience on searching bat	105
4.18	Types of affordances in home-school journey	111
4.19	Experiences of home-school journey	112
4.20	Positive affordances	113
4.21	Negative affordances	115
5.1	Home-school journey for children's performance	118
5.2	Relationship between mobility and level of affordances	121

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Approval letter from Educational Planning and Research Division, Ministry of Education Malaysia	136
B	Approval letter from Johor Education Department, Ministry of Education Malaysia	137
C	Approval letter from the headmaster of Sek. Keb. Kampung Sri Gunung Pulai	138
D	Approval letter from the head of Kampung Sri Gunung Pulai	139
E	Permission letter from parents	140
F	Drawing sheet	142
G	Open ended interview (Based on drawing)	143
H	Diary (Participant observation)	145
I	Taxonomy of affordances	147
J	Level of affordances	151
K	Types of affordances	154
L	Children's drawing	158

CHAPTER 1

INTRODUCTION

1.1 Introduction

Home, school and recreational facilities are three of the main settings that are referred to as the institutional triangle in children's lives (Pooley et al., 2005; Rasmussen, 2004). These settings are created by adults and are embedded with rules about how and where children should play and learn, with limited engagement of the outdoor environment. Concerned with this situation, this study has recognized the home-school journey as a part of children's everyday routine, a place that allows children to play, stimulates their five senses and informally learn about the outdoor environment. Play is a primary mechanism for children to engage with physical activities and enhance the potential for learning about the environment (Wilson, 2008). Play may encourage physical exercising, creativity, problem-solving skills, and improve children's interaction with peers. It means that play may stimulate children's physical, cognitive, and social performances. Play also allows repetitive engagements with the environment in everyday school journeys that make children more familiar with their surroundings.

Children in urban and rural area may have diverged experience of play in the outdoor environment. Children in the urban environment are normally lives in an environment that provide less opportunity for the natural environment experiences (Malone, 2003). In contrast to rural children, they have affluent engagement with the natural environment as compared to their urban counterparts (Pooley, et al., 2005). It means that the rural children have a supportive environment to explore and experience the environment. Drawing to this understanding, this study was designed to explore the affordances of home-school journey which stimulate children's physical, social and cognitive performances. This thesis, therefore, attempts to focus on investigating the aspects taken into consideration included the children's type of mobility and properties and attributes of the journey. Focus has been directed on children's play and learning effects from the rural environment and its impact on children performances. Previous research has claimed that most of the affordances in environment involved engagement with living things because many children love to play in natural environments (Wilson, 2008). Therefore, rural children were assumed to have greater opportunity to engage with the natural elements in their play.

Therefore, this chapter covers on the overall structure of the study that begins with a brief introduction of the research, reviews the problems that trigger the research, discussing the gap of knowledge and clearly states the aim, objectives and research questions. Next, this chapter outlines the significance of and limitation of the study. Finally, this chapter shows a brief structure of the thesis.

1.2 Statement of problems

Children are noticeably having high desire and intention to play, either in or outside home. Children who play in indoor setting are commonly expose to technological entertainments such as computer games, which referred as passive play (Tai et al., 2006; Spencer and Blades, 2005). While, children who play in outdoor setting are commonly engage with active play due to the attraction, challenges offer by the setting, which inspire them to move around (Tai et al., 2006). It means that playing outdoor allows children to engage with physical elements and social activities. However, children nowadays face with the declining opportunities for outdoor activities, which resulted disconnection with nature and low performance among children. Figure 1.1 shows the formulation of the problem statement.

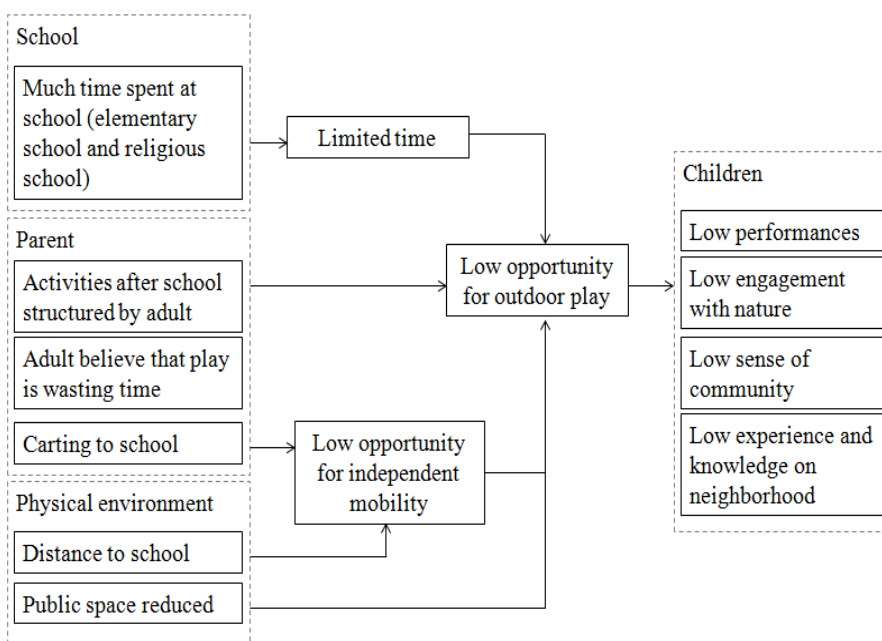


Figure 1.1: The formulation of problem statement

1.2.1 The decline of opportunities for outdoor play

Children everyday's lives engaged with three institutional triangles which created by adult includes children's home, school and recreational facilities (Pooley et al., 2005; Rasmussen, 2004). Among these places, children spend large proportion of their time at school (Londal, 2010). Though, the children still have opportunities to engage with physical activity during school hour including in physical education classes, recess; and organized sport (Veitch, et al., 2007). However their time is limited according to school hour and their activities are restricted according to rules. As reported by Hofferth and Sandberg (2001), American children's playtime has dropped by almost 25%. Concurrently, the children did not have equal amounts of free time after the school hour to engage in physical activity (Veitch et al., 2010; Tai et.al, 2006). The problems are correlated with the children's schedule that is pack with extracurricular activities which is structured by adult (Veitch et al., 2007). The adult believe that play is wasting time (Wilson, 2008). It shows that children everyday life has become structured and concentrated which leaving them less time for free activities (Rasmussen, 2004; Kytta, 2003).

In Johor, Malaysia, there are 632 numbers of elementary school, which are located 70% in rural and 30% in urban area. It means that more than 250,000 of children aged 7-12 years old are in elementary school which about 130,000 in rural areas and 120,000 in urban areas. They are compulsory to attend the elementary school in the morning and some attend a curriculum with religious studies in the afternoon. Besides, most of them are attending an extra class after school. This situation is due to the parent's awareness of having a good education for children, which is increasing in Malaysia. Thus, it creates a huge impact over children's lifestyle, where children participation in outdoor environment has decrease due to limited time and opportunities for outdoor play. Indirectly, the children's experience with natural environment will become low.

1.2.2 Children's disconnection from nature and low performances

Studies on children's environment found that nature is the most significant place to develop children's performances (Tai et al., 2006; Malone, 2003; Chawla and Heft, 2002; Kellert, 2002). It means that the declining of opportunities for outdoor activities has influenced the children's connection with nature and their performance. However, the reduction of outdoor play space nowadays (Rezasoltani, 2013) has influence the lack of outdoor activities which avoid the opportunities for children to engage with nature (Mohd Suhaizan Shamsuddin, 2009). Children are being taught at school and had limited hands-on experience on their surrounding environments. It means that much of their knowledge gains from vicarious mode, not direct interaction. As reported by Nor Fadzila Aziz and Ismail Said (2012), school ground especially in Malaysia do not provide opportunities for children to explore or learn from natural landscapes, in either formal or informal ways. Thus, this situation certainly affected our children's performances of physical, social and cognitive.

The problems also influence by the increasing trends toward vehicular modes for home-school travel in recent years (Ahmadi and Taniguchi, 2007) which in turn results in decreased level of physical activity (Spinney and Millward, 2011), social activity (Spencer and Blades, 2005) and independent (Pooley et al., 2005) among children. This shortcoming is due to the worry of parents on children's safety (Ahmadi and Taniguchi, 2007) and home-school distance (Freeman and Tranter, 2011; Mcdonald et al, 2010). The mobility of children is connected to their ability to perceived affordances. Therefore, the school journey is found to be the significant area for children gain benefits especially for children with independent mobility.

1.3 Research gap

There are extensive researches on children's experiences in their environment, which are mostly focused on home, neighborhood, school, and recreational area (Nor Fadzila Aziz and Ismail Said, 2012). It means that less research has concerned on children's experiences in the home-school journey. However, among of these places, home-school journey is also recognized as a part of children's everyday routine place that allows children to get different experience while they move from one place to the other place along their journey (Figure 1.2).

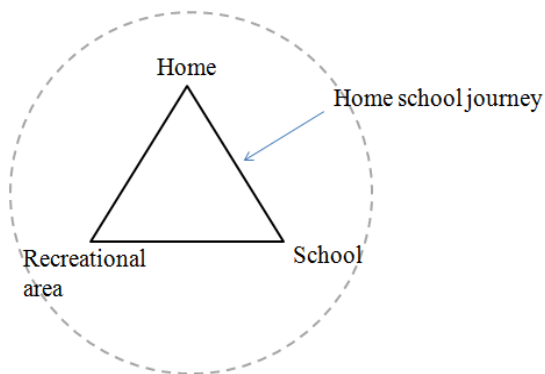


Figure 1.2: The children's routine place

The studies of home-school journey mostly focused on the children's mode of travelling to school toward the impacts of spatial skills (Thommen et al., 2010; Ahmadi and Taniguchi, 2007; Joshi et al., 1999; Matthews, 1984), and parental anxiety on safety (Shokoohi et al., 2010; McDonald et al., 2010; Jensen, 2008; Roberts, 1995). While a study conducted by Rezasoltani (2013) and Romero (2007) provide important insight regarding factors that encouraging children for choosing independent mobility to school. Independent mobility was found very important in promoting children's development and engagement with the surrounding (Romero, 2010; Ross, 2007; Cooper, 2003). Some consideration were taken on the studies

includes demographic factor, travel modes, and perceptions. However, most of the studies on the home-school journey were conducted in urban area within the western countries. Therefore, this study should be conducted in non-western countries due to different environmental and cultural factors. Besides, physical setting and affordances of places are found as a main factor for children's development (Romero, 2007; Striniste and Moore, 1989). Different physical setting would have different affordances for children's performances in home-school journey. Thus, this study should explore on the affordance of home-school journey toward the children's performance in physical, social and cognitive in the context of rural area by considering its physical attributes and children's mode of travelling to school. Table 1.1 shows the summary of related studies on children experiencing home-school journey.

Table 1.1: Previous studies on children experiencing home-school journey

Concern	Context	Studies	Parameter	Finding
Factors encouraging walk	Rezasoltani (2013)	Urban	Travel behavior and travel modes	Factors encouraging walk: Independent mobility, safety and security and play time.
	Romero (2007)	Urban	Children's view	Physical attributes allow children to feel welcome and engage their senses that can motivate them to walk.
Spatial skills	Thommen et al. (2010)	Urban	Age, travel mode and ability to develop map	No gender differences were found and older children has better spatial knowledge.
	Ahmadi and Taniguchi (2007)	Urban	Age, gender, travel mode, traffic, and social safety.	Age, traffic danger, social insecurity and travel mode are the influential factor in children's spatial knowledge. No significant different between gender.
	Joshi et al. (1999)	Urban	Travel mode and children's perception	Spatial skills not influenced by travel mode (children accompanied by parent have almost the same environmental knowledge).
	Matthews (1984)	Suburban	Age, environmental knowledge	Children represent space varies with age. Both mapping ability and map accuracy improved as children became older.

Continue...

Safety	Shokoohi et al. (2010)	Urban	Parents' and children's perceptions of different socio-economic areas	Low-income children had a higher rate of walking to school because they need to avoid travel costs. Parents who had negative perceptions of safety tended to use motorized modes.
	McDonald et al. (2010)	Urban	Parental perception of social environment	Parents will allow their children to walk and bike to school when they believe other adults in the area will watch out for and monitor children
	Jensen (2008)	Urban	Infrastructure motorised traffic and travel time	Road safety include design and motorised traffic volumes influence children's mode choice
	Roberts (1995)	Urban	The risk of pedestrian injury	Adult accompaniment to school reduced the child's risk of injury.
Independent mobility and development	Romero (2010)	Urban	Travel modes, and the sources of interest during the journey	Children who walked alone or with siblings/peers reported more features of interest and provided opportunities to converse with friends and explore their surroundings.
	Ross (2007)	Rural and urban	Children's views and perception	The journeys are experiential and sensory geographies for children demonstrate their active, emotional and imaginative engagements with environments.
	Cooper (2003)	Urban	Physical activity and the time spent in activity	Children who walked to school were more active especially boys were more active after school and in the evening.
Evolution	Pooley et al. (2005)	Urban	Changes of mobility from past and present	Children travelling to school by car are increases, and consequent decreases in walking alone.

1.4 Aim and objectives of study

This phenomenology research investigates children's experiences during a home-school journey in the rural environment in order to identify the actualised affordances which stimulate their performances. The objectives are;

- i. To identify factors that influences children's performance along the home-school journey.
- ii. To identify how children perceive home-school journey as a play and learning environment;
- iii. To investigate children's physical, social and cognitive performance in home-school journey; and

1.5 Research questions

The research questions of this study are:

- i. What are the factors at the home-school journey that afford different affordances among children?
- ii. How children perceive the home-school journey environment as a play and learning environment?
- iii. How children's activities along the home-school journey can contribute in the development of children's physical, social and cognitive performances?
- iv. What is the most significant element that affords children's activities?

1.6 Scope and variables of study

This research looking at the children-environment relationship in home-school journey by considering physical setting and children's mobility to school as factors that may influence children's physical, social and cognitive performance. In order to achieve the aim of the study, the study employs a visual method to identify the children performances based on their perception on perceived affordances, play behavior, activities and experience in home-school journey. Experiencing home-school journey in rural setting stimulates three aspects of children performance which are physical, cognitive and social. All of the three aspects of children's performance are interrelated (Figure 1.3).

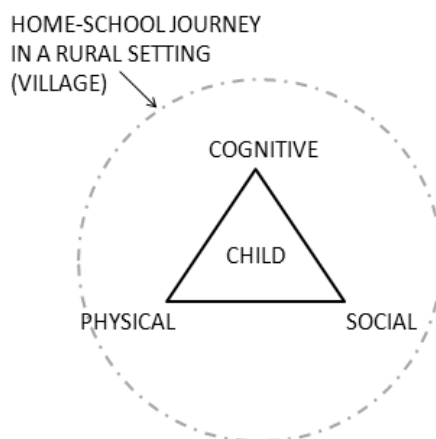


Figure 1.3: The relationship between three aspects of children's performance in home-school journey

Therefore, middle childhood children, aged 9-11 years old are chosen as the respondent since it is at this age that children begin to travel independently to school and begin to see the outdoor environment as an attractive and interesting place. For this reason, the physical elements and children's mobility to school is considered as

independent variable of the research. The research had chosen Kampung Sri Gunung Pulai, a rural area in Johor as a study site in order to achieve the aim of the study. The village is located on the hillside of Gunung Pulai and certainly surrounded by natural elements such as rivers, orchard, plantation and forest. The various settings of the rural environment led to different children's behavior of play and learning. Therefore, the rural setting and the physical elements of the home-school journey environment include built and natural elements are the independent variable of the research. However, the study only considers the routes taken by the children from home to school within the village. The different route taken will offer a different experience to children.

1.7 Significances of study

The study fills the gap of knowledge on the children's performance of the home-school journey in a rural environment in Malaysia. The study exposed the affordances of the home-school journey in a rural area for the development of children's performance through play and learning. The affordances are investigated through the children experience along their home-school journey in a rural area. Thus, the study found that exciting experiences gained from the outdoor environment affords children to spare new knowledge and develop their skills through direct participation and hands-on experience. The children are not only learning how to play but also have opportunities to improve their ability in physical, cognitive and social skills. It means that the study significantly identifies the diverse opportunities offered by rural environment for children's performance. Therefore, the study suggested physical elements, quality of environment and mobility that can support children's play and learning toward the development of children's performance and this would create a better performing adults in the future. The finding of the study

provided ideas and setting consideration for creating a better environment for children's home-school journey in the neighborhood area.

1.8 Limitation of study

The study has suggested how home-school journey can be a play and learning place for middle childhood children by improving the development of their performances. However, the findings of the study have their limitations because they were based on the behavioral responses of middle childhood children, aged 9-11 years, who were attended the elementary school in rural area, and hence the finding may not be applicable to other age groups such as early childhood or adolescents. The location of the study was at the home-school journey in a rural area, Kampung. Sri Gunung Pulai, Johor. Therefore, the behavioral responses of the children are different if the research was conducted in other area such as urban area.

1.9 Structure of thesis

The thesis is divided into six main chapters (Figure 1.4) including:

Chapter 1 presents the overall structure of the study which begins with a brief introduction to the research, and followed by a review of the problem statements, aims and objectives and research question. This chapter clearly states the

significance of the study by discussing how the study adds and fills the gap of knowledge. The chapter also outlines the limitations of the study.

Chapter 2 reviews the relationship of children play and performance in outdoor environment. This chapter reviews the Theory of Affordances suggesting the relationship of the children and the environment. This chapter was divided into five topics includes: (1) children's home-school journey, (2) middle childhood children, (3) children's play, (4) children's outdoor environment, and (5) Theory of Affordances.

Chapter 3 explains and justifies the data gathering method used in detail and explains the rationale of the methodology adopted for this study. The children behavioral responses were elicited using (1) drawing and interview and (2) participant observation. Visual method includes children drawing and video recording was identified as the best method to elicited children's responses. This chapter also outlines how the data were analysed using qualitative content analysis.

Chapter 4 addresses the finding from the data analysis and discussing the data from the literature review. The findings and discussion was discussed into two major categories includes (1) children's experience of home-school journey, and (2) affordances of home-school journey. Figures are used to illustrate the finding and direct quotation and paraphrasing of data from the interviews are used to support the generalizations made.

Chapter 5 obviously ends with a brief conclusion that highlighted the significant factors that contributes to the children's performance in home-school journey. It also explains the simple model of children's performance in home-school

journey that is created in this research. Further the chapter discusses on the implication for planning of children's environment and the theoretical implication.

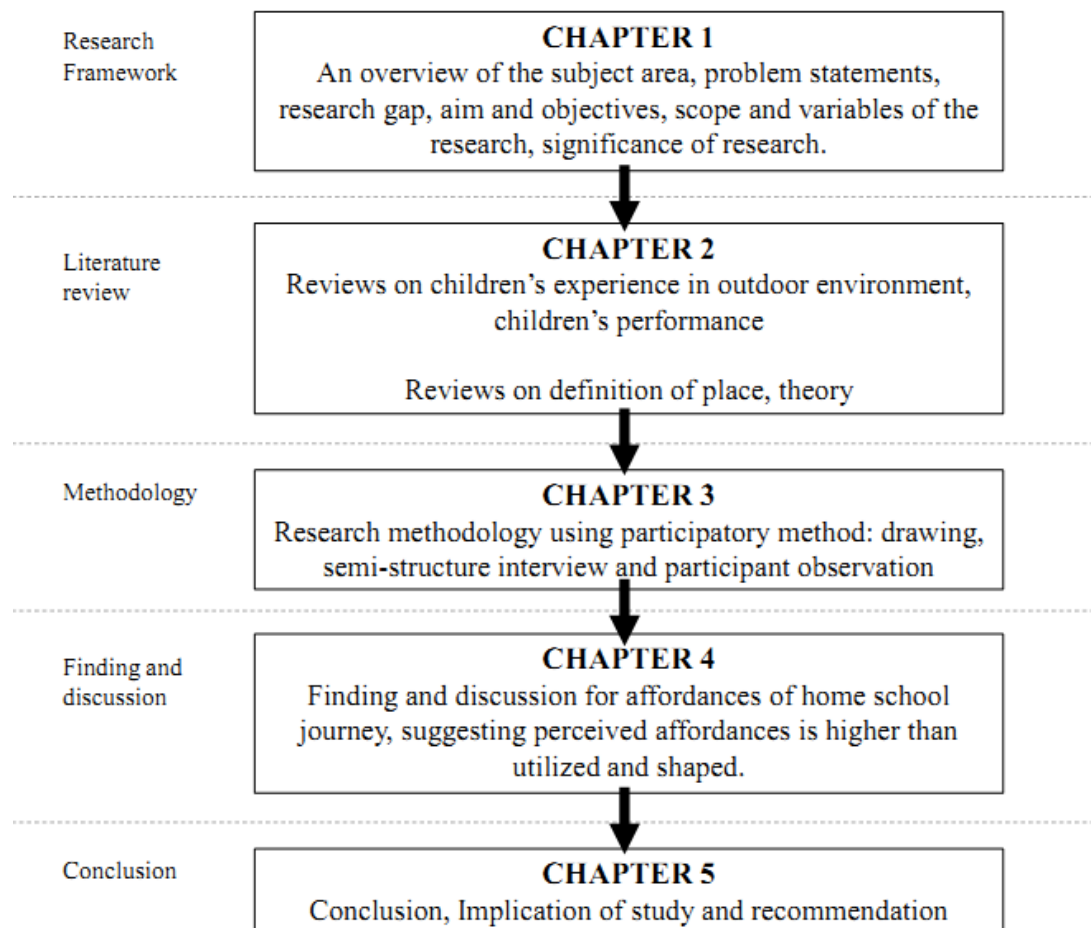


Figure 1.4: Thesis structure

REFERENCES

- Aaron, R.F. and Witt, P.A. (2011). Urban Student's Definitions and perceptions of Nature. *Children, Youth and Environments*. 21(2), 145-167.
- Ahmadi, E and Taniguchi, G. (2007). Influential Factor on Children's Spatial Knowledge and Mobility in Home-School Travel: A Case Study in The City of Tehran. *Journal of Asian Architecture and Building Engineering*. 6(2), 275-282.
- Barker, J. and Weller, S. (2003). 'Is it fun?' Developing children centered research methods. *The International Journal of Sociology and Policy*. 23 (1/2), 33-58.
- Benson, C.L. (2009). *Changing Places: Children's Experience of Place During Middle Childhood*. Master Thesis, Humboldt State University.
- Berk, L. (1998) *Development through the Lifespan*. Needham Heights, MA: Allyn & Bacon.
- Bjorklid, P. and Nordstrom, M. (2007). Environmental Child-friendliness: Collaboration and Future Research. *Children, Youth and Environment*. 17(4): 388-401.
- Black, C., Collins, A. and Snell, M. (2001). Encouraging Walking: The Case of Journey-to-school Trips in Compact Urban Areas. *Urban Studies*. 38(7), 1121-1141.
- Boyden, J. & Ennew, J. (1997). *Children in Focus: A Manual for Participatory Research with Children*. Stockholm: Save the Children Sweden.
- Bronfenbrenner, U. (1979). *The Ecology of Human Development*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, Urie (1993). "Ecology of Cognitive Development: Research Models and Fugitive Findings." In Wozniak, Robert H. and Kurt W. Fischer, eds. *Development in Context: Acting and Thinking in Specific Environments*. Hillsdale: Lawrence Erlbaum, 221-288.
- Castonguay, G. and Jutras, S. (2009). Children's Appreciation of Outdoor Places in a Poor Neighborhood. *Journal of Environmental Psychology*. 29(1), 101-109.
- Charterjee, S. (2005). Children's Friendship with Place: a Conceptual Inquiry. *Children, Youth and Environment*. 15 (1), 1-25.

- Chawla, L. (2002). *Toward Better Cities for Children and Youth*. In L.Chawla, ed. *Growing Up in an Urbanizing World*. United Kingdom: United Nations Educational, Scientific and Cultural Organization. 219-242.
- Chawla, L and Heft, H. (2002). Children's Competence and The Ecology of Communities: a Functional Approach to The Evaluation of Participation, *Journal of Environmental Psychology*. 22: 201-216.
- Christensen, P. (2003). *Place, space and knowledge: children in the village and the city*, In *Children in the City: home, neighborhood and community*. Vol. Routledge Falmer (Eds, Christensen, P. and O'Brien, M.), London: 13-28.
- Cobb, E (1977) *The Ecology of Imagination in Childhood*. New York: Columbia University Press.
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (2nd Edition)*. California: Sage Publications.
- Dyment, J.E. and Bell, A.C. (2007). Active by Design: promoting Physical Activity through School Ground Greening. *Children's Geographies*. 5(4), 463-477.
- Eccles, J.S. (1999). The Development of Children Ages 6 to 14. *The Future of Children*. 9(2), 30-44.
- Ennew, J. (2009). *The Right to be Properly Researched: How to Do Rights-based, Scientific Research with Children*. Bangkok: Black on White Publications
- Fjortoft, I. (2004). Landscape as Playscape: The Effects of Natural Environments on Children's play and Moto Development. *Children, Youth and Environments*. 14(2), 21-44.
- Freeman, C. (1995). Planning and Play: Creating Greener Environment. *Children's Environments*. 12(3), 164-176.
- Freeman, C. and Tranter, P. (2011). *Children and Their Urban Environment Changing World*. USA: Earthscan.
- Frost, J.L. (1992). *Play and Playscapes*. New York: Delmar Publisher Inc.
- Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*, Boston: Houghton Mifflin.

- Graue, M. E. and Walsh, D. J. (1995). Children in context: Interpreting the here and now of children's lives, In *Qualitative Research in Early Childhood Settings*, Vol. (Eds, Hatch, J. A.), Westport: Praeger Publishers, 135-154.
- Hart, R. (1979). *Children's Experience of Place*. The University of Michigan. Irvington.
- Hart, C. H. (1993). *Children on Playgrounds: Research Perspectives and Applications*. Albany: State University of New York Press.
- Hartle, L. and Johnson, J. E. (1993). *Historical and Contemporary Influences of Outdoor Play Environments*, In *Children on Playgrounds: Research Perspectives and Applications*, Vol. (Eds, Hart, C. H.), Albany: State University of New York Press, 14-42.
- Heft, H. (1988). Affordances of Children's Environments: A Functional Approach to Environmental Description. *Children's Environments Quarterly*. 5 (3): 29-37.
- Heft, H. (1998). Essay review: The elusive environment in environmental psychology, *British Journal of Psychology*. 89, 519-523.
- Heft, H. (1999). *Affordances of Children's Environments: A Functional Approach to Environmental Description*, In: Nassar, J. J. and Preiser, W. F. E. eds. *Directions in Person-Environment Research and Practice*, Aldershot: Ashgate, 44-69.
- Hillman, M. (1993). *Children, Transport and the Quality of Life*. London, UK: Policy Studies Institute.
- Hillman, M., Adams, J., and Whitelegg, J. (1990). *One False Move: A Study of Children's Independent Mobility*. London: Publications of the Policy Studies Institute.
- Hofferth, S.L. & Sandberg, J.F. "Changes in American Children's Time, 1981-1997." In S.L. Hofferth & Owens, T.J. (Eds.), *Children at the Millennium: Where Have We Come From, Where Are We Going?* (pp. 1-7). New York: JAI, 2001.
- Horelli, L., (2007). Constructing a theoretical framework for environmental child-friendliness, *Journal of Children, Youth and Environments*. 17(4).
- Hughes, F.P. (2010). *Children, Play and Environment*. US of America: Sage Publication Inc.

- Hume, C., Salmon, J. and Ball, K. (2005). Children's Perceptions of their Home and Neighborhood Environments, and their Association with Objectively Measured Physical Activity: A Qualitative and Quantitative Study. *Health Education Research*. 20(1), 1-13.
- Jensen, S.U. (2008). How to Obtain Health Journey to School. *Transportation Research Part A* 42, 475-486.
- Joshi, M.S., MacLean, M. and Carter, W. (1999). Children's Journey to School: Spatial Skills, Knowledge and Perceptions of the Environment. *British Journal of Developmental Psychology*. 17, 125-139.
- Kellert, S. R. (2002). *Experiencing Nature: Affective, Cognitive, and Evaluative Development in Children*. In P. H. Khan & S. R. Kellert (Eds.), *Children and Nature* (pp. 117-151). Cambridge: MIT Press.
- Kernan, M. (2010). Outdoor Affordances in Early Childhood Education and Care Settings: Adults' and Children's Perspectives. *Children, Youth and Environment* 20 (1), 152-177.
- Korpela, K. (2002). *Children's Environment*. In R. B. Bechtel, & A. Churchman (Eds.), *Handbook of environmental psychology* (363–373). New York: Wiley
- Kytta, M. (1997). Children's Independent Mobility in Urban, Suburban and Rural Environments. In Camstra (Ed.). *Growing Up in a Changing Urban Landscape*. Assen: Van Gorcum.
- Kytta, M. (2002). Affordances of Children's Environments in the Context of Cities, Small Towns, Suburbs and Rural Villages in Finland and Belarus. *Journal of Environmental Psychology*. 22, 109-123.
- Kytta, M. (2003). Children in Outdoor Context: Affordances and Independent Mobility in the Assessment of Environmental Child Friendliness. Helsinki University of Technology, Espoo, Finland.
- Kytta, M. (2004) 'The Extent of Children's Independent Mobility and the Number of Actualized Affordances as Criteria for Child-Friendly Environments'. *Journal of Environmental Psychology*. 24, 179 – 198.
- Kytta, M. (2006). *Children's Experience of Places: Environmental Child-Friendliness in The Light of The Bullerby Model In: Spencer, C., and Blades,*

- M., *Children and their Environments: Learning, Using and Designing Spaces*, Cambridge University Press, United Kingdom, 141-158
- Laaksoharju, T., Rappe, E. and Kaivola, T. (2012). Urban Forestry and Urban Greening Garden Affordances for Social Learning, Play and for Building Nature-Child Relationship. *Urban Forestry and Urban Greening*. 11(2), 195-203.
- Ladd, G. W. (1999). Peer Relationships and Social Competence During Early and Middle Childhood, *Annual Review Psychology*, 50, 333-359.
- Lee, J. and Abbott, R. (2009). Physical Activity and Rural Young People's Sense of Place. *Children's Geographies*. 7(2), 191-208.
- Londal, K., (2010). "Revelations in Bodily Play: A Study Among Children in an After-school Programme". The Norwegian School of Sport Science.
- Louv, R. and Charles, C. (2009). Children's Nature Deficit: What We Know and Don't Know. *Children and Nature Network*. (September), 1-32.
- Maiss, R. and Handy, S. (2011). Bicycling and Spatial Knowledge in Children: An Exploratory Study in Dacis, California. *Knowledge Creation Diffusion Utilization*. 21(2), 100-107.
- Malone, K. (2003). "Children's Environmental Learning and the Use, Design and Management of School Grounds", *Children, Youth and Environments*. 13(2).
- Malone, K. (2007) The Bubble-Wrap Generation: Children Growing Up in Walled Gardens, *Environmental Education Research*. 13(4), 513-527.
- Matthews, M.H. (1984). Environmental Cognition of Young Children: Images of Journey to School and Home Area. *Institute of British Geographers, New Series*. 9 (1), 89-105.
- McDonald, M.C., Deakin, E. and Aalborg, A.E. (2010). Influence of The Social Environment On Children's School Travel. *Preventive Medicine*. 65-68.
- Meire, J. (2006). Qualitative Research o Children's Play: A review of Recent Literature, *Childhood and Society Research Center*. 1-43.
- Miles, M. and Huberman, M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook, 2nd ed.* Thousand Oaks, CA: Sage.

- Ministry of Education Malaysia. (2011, 31 January 2011). "Statistic." Retrieved 31 January, 2011, from <http://www.moe.gov.my/?act=search&id=0&keyword=statistik+murid+sekolah+rendah&lang=en>
- Mitchell, H, Kearns, R. A., and Collins D.C.A., (2007). Nuances of neighbourhood: Children's perceptions of the space between home and school in Auckland, New Zealand. Elsevier. Vol. 38, page 614-627.
- Mohd Suhaizan Shamsuddin and Ismail Said (2008). Middle Childhood Children Interaction with home and Neighborhood Gardens in Urban and Rural Setting. *2nd International Conference on Built Environment in Developing Countries (ICBEDC 2008)*, 1976-1990.
- Mohd. Suhaizan Shamsuddin (2009). *Affordances of Home and Neighbouring Gardens Preferred By Children for Learning and Playing Experiences*. Master Thesis, Universiti Teknologi Malaysia.
- Moore, R.C. (1986), *Childhood's Domain: Play and Place in Child Development*, Croom Helm, London.
- Moore, R. (1990). *Children's Domain: Play and Place in Child Development*. Berkeley, CA: MIG Communications.
- Noor Ain Yatiman, Nor Fadzila Aziz and Ismail Said (2012). Affordances of Homeschool Journey in Rural Environment for Children's Performances. *Procedia-Social and Behavioral Sciences*. 68(2012), 395-405.
- Nor Fadzila Aziz and Ismail Said (2012). The Trends Influential Factors of Children's Use of Outdoor Environments: A Review. *Procedia- Social and Behavioral Sciences*. 38(2012), 204-212.
- Olds, A.R. (1989). Psychological and physiological harmony in child care center design, *Children's Environment Quarterly*. 6(4), 8-16.
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods (3rd Ed.)*. Thousand Oaks, CA: Sage.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods (2nd ed.)*. Newbury Park, CA: Sage Publications
- Piaget, J., & Inhelder, B. (1969). *The Psychology of Child*. New York: Basic Books.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York: Rutledge.

- Pooley, C.G., Turnbull, J., and Adams, M. (2005). *The Journey to School in Britain Since the 1940s: Continuity and Change*. Blackwell Publishing on behalf of The Royal Geographical Society (with the Institute of British Geographers). 37(1), 43- 53.
- Prescott, E. (1987). The Physical Environment and Cognitive Development in Child-Care Centers. In: Weinstein, C. S. and David, T. G. eds. *Spaces for Children*, New York: Plenum Press, 73-87
- Prezza, M. (2007). Children's Independent Mobility: A Review of Recent Italian Literature, *Children, Youth and Environment*. 17(4): 293-318.
- Punch, S. (2002). Research with children: the same or different from research with adults?. *Childhood*. 9 (3), 321-341.
- Rasmussen, K. (2004). "Places for Children- Children's Places'. *Childhood*. 11:155
- Rezasoltani, M. (2013). *Influential Factors on Enhancing Intermediary Spaces as a Context of Children's Walking to School*. Ph.D. Thesis. Universiti Teknologi Malaysia.
- Rissotto, A. and Tonucci, F. (2002). Freedom of Movement and Environmental Knowledge in Elementary School Children. *Journal of Environmental Psychology*. 22, 65–77.
- Rissotto, A. and Giuliani, M. V. (2006). "Learning Neighborhood Environments: The Loss of Experience in a Modern World." In Spencer, C. and M. Blades, eds. *Children and their Environments: Learning, Using and Designing Spaces*. New York: Cambridge University Press, 48-62.
- Roberts, I. (1995). Adult Accompaniment and the Risk of Pedestrian Injury on the School-Home Journey. *Injury Prevention* 1995. 1, 242-244.
- Romero, V. (2010). Children's View of Independent mobility during their School Travels. *Children, Youth and Environments*. 20(2), 46-66.
- Romero, V.M. (2007). "I will be not a nerd". Children's Development, The Built Environment and School Travel. *Built Environment*. 997-1007.
- Ross, N.J. (2007). Foregrounding the Meaning of School Journeys and Children's Engagements and Interactions in their Everyday Localities. *Children's Geographies*, 5(4), 373-391.

- Shokoohi, R., Noor Rosly Hanif and Melasutra Md Dali. (2010). Children Walking to and from School in Tehran: Associations with Neighborhood Safety, Parental Concerns and Children's Perceptions. *Asian Journal of Environment-Behaviour Studies*. 2 (4), January 2011.
- Said, I. (2006). *Garden as Restorative Environment for Children in Malaysian Hospital*. Ph.D. Thesis, Universiti Teknologi Malaysia.
- Spencer, C. and Blades, M. (2005). *Children and Their Environments: Learning, Using and Designing Spaces*, the Edinburgh Building: Cambridge University Press.
- Smith, P.K. (2009). *Children and Play*. Oxford, UK: Wiley Blackwell.
- Sobel, D (2002). *Children's special places: exploring the role of forts, dens, bush houses in middle childhood*. Detroit, Michigan: Wayne State University Press.
- Spinney, J.E.L. and Millward, H. (2011). School Travel Mode Choice and Characteristics of the Children, School and Neighborhood. *Children, Youth and Environments*. 21(2), 57-76.
- Striniste, N. A. and Moore, R.C. (1989). *Early Childhood Outdoors; A Literature Review Related to the Design of Childcare Environments*. *Children's Environment Quarterly*. 6(4).
- Tai, L., Haque, M.T., MsLellan, G.K., Knight, E.J. (2006). *Designing Outdoor Environments for Children: Landscaping Schoolyards, Gardens, and Playgrounds*. United States of America: McGraw-Hill.
- Thommen, E., Avelar, S., Sapin, V.Z., Perrenoud, S. and Malatesta, D. (2010). Mapping the Journey from Home to School: A Study on Children's Representation of Space. *International Research in Geographical and Environmental Education*. 19(3), 191-205.
- Titman, W (1994) *Special Places, Special People: The Hidden curriculum of school grounds*. London: WWF UK / Learning Through Landscapes.
- Van der Kooij, Rimmert (2004), 'Play in Retro and Perspective', *23rd ICCP World Play Conference, 'Play and Education'*, Cracow, 15-17 September 2004.
- Veitch, J., Salmon, J. and Ball, K. (2007). Children's perceptions of the use of public open spaces for active free-play. *Children's geographies*. 5(4), 409-422.

- Veitch, J., Salmon, J., Ball, K. (2010). Individual, social and physical environmental correlates of children's active free-play: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*. 7:11.
- Weber, R.P. (1990). *Basic Content Analysis*. Newbury Park: Sage Publications.
- Wells, N.M. and Evans, G. W. (2003). Nearby Nature: A buffer of Life Stress among Rural Children. *Environment and Behavior*. 35, 311.
- Wilson, R. (2008). *Nature and Young Children Encouraging Creative Play And Learning In Natural Environments*. New York: Routledge.