RESEARCH PROPOSAL

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1. **Research Topic**

Middle Childhood Children Outdoor Learning through Farming Activities in Rural Area

2. **Research Aim**

The aim of this study is to investigate how the environment shapes the middle childhood children’s behavior through outdoor learning in the rural area as a second classroom in order to stimulate children’s growth and development.

3. **Research Objectives**

To achieve the aim, the following research objectives are formulated:

i) To identify factors that can influence children’s to participate in design process through their first hand contact with the outdoor environment;

ii) To examine how the children’s physical, social and cognitive performance stimulated by the outdoor environment that leads to Experiential Learning; and

iii) To examine the children’s behavior through play and learn with nature that has an impact on molding their personality towards the outdoor environment.

4. **Assumption**

By giving the children space or place to explore the outdoor that will give them creative enough to manipulate the available natural sources for their daily living and also involve children manipulating the nature tools as part of their play. Children extend their learning from indoors to outdoors to experience the wonder of natural world in free play activities. Thus, the context of outdoor learning through play can be as a transition zone from indoors to outdoors for direct natural contact.
5. Research Questions

The research questions dealt here are:

i) What can children learn from the design process on outdoor learning base on farming practices that lead to self-directed to become creative learner?

ii) Does the outdoor learning activity on farming creates a balance between play and learn which enhances children’s motor skill, social interactions and cognitive performance?

iii) How intensity of outdoor learning experience influence the children personality?

6. Research Background

UNESCO (2010) defines that early childhood stage encompasses the period from birth, to eight years old. In fact, this the crucial stage of the children as they were contributing their physically, psychologically, socially and morally (Rahman, 2002). The children are active learners from birth and their learning experiences are vital which they learn at their pace. Children always wanted to challenge themselves as well to be secure when come to find outdoor new things (Noradahl and Einarsdóttir, 2015).

The Malaysia education system aims to provide students with a holistic and broad-based education. Part of being a developing country, Malaysia faces new challenges due to globalization, liberalization, internationalization and the development of information and communication technology (ICT) (Osman, Tuan Soh, and Arsad, 2010; Soh et. al, 2012). Several changes occurred in the ways science educators, and researchers view the learning which emerges from informal contexts such as museums, science centers, botanic gardens, and aquarium. During the 1980s, there was a search for evidence and a widespread lack of acceptance that "real learning" occurred in such of outdoor contexts (Anderson et. al, 2003). Therefore, it is necessary for the educational system to make parallel changes to fulfill
its mission of the society, namely the preparation of the middle childhood for education beyond the classroom. Being in an outdoor environment such as the park, garden, own backyard has positive on their education, health, and well-being and emotional on developing their personal identity. (Rios and Brewer, 2014).

By the year 2020, Malaysia was to become a developed nation which we are now competing in the world of Science and Technology with other countries. The government has realized that science subjects are crucial and therefore students at the early age must be exposed and to prepare them for a more advanced study in the future. Therefore, as a developing country, Malaysia needs to have more school that emphasize on subject outdoor learning, as a place of learning for the children, which play with nature as a major role in children development. Aside from home, children will come through so many life experiences through outdoor environment who possess relevant skills where they are more likely to be interested in their surroundings and taking part in any nature activities (Slade, Lowery and Bland, 2013). And as a result, it will increase the science content knowledge and develop environmentally conscious students in the future (Liefländer et al., 2016).

In Malaysia Education Blueprint (Education, 2016), reported that all children will have the opportunity to attain an excellent education through the National Education Philosophy (NEP) which aims to develop the potential spiritual of each in a holistic, intellectual with balance in spiritual, physically and emotionally. Thus the Malaysian government has made that this will become part of NKRA (National Key Result Area) towards the Vision 2020 which can support the school curriculum on children outdoor learning program. Students will enjoy more inquiry-based learning in Science, Technology, Engineering and Mathematics (STEM) through a hands-on approach and the enhancement of practical sessions with more enquiry-based learning. Students will also be able to utilize Blended Learning Open Source for Science or Mathematics Studies (BLOSSOMS) in an engaging learning environment which allows students to learn at their pace and learning styles (Malaysia Education Blueprint, 2013).

For the non-formal and informal syllabus base on outdoor activities, this has implemented in Malaysia through the science learning education. Unfortunately, the
curriculum has been using as the indoor learning system which bases on memory. This type of system has been used widely almost all the institution which consists of government and private preschool. And for children, they need to be outdoor where there can appreciate and interact the wilderness of nature. Outdoor learning will trigger their senses through direct and indirect contact through nature. For example, through observation, sensory stimulation and movement in the space. And for indirect contact, there are through interpersonal communications, educations, and media social (Malone and Transter, 2003).

7. Problem Statement

Nowadays with Malaysia rapid social and economic firm, the pedagogy of teaching and learning on outdoor learning has been recognized as part of learning approach. Since then the expansion of the schools over in Malaysia, with some of the programme and the curriculum has become one of the alternative methods of learning in school design (Harbour et.al., 2008). From time to time, it has changed to suits with existing policies, the education national key result area and also the proposed expansion of the 11th Malaysia Plan. The Eleventh Malaysian Plan 2016-2020, which revealed under the Economic Planning Unit (2015), Malaysia governments are expected to upholding the need and interest of children. Meaning that by the year 2020, Malaysia will remain a young nation, children aged bellowed 18 are expected to make 29.9% out of the total population (Economic Planning Unit, 2015). Therefore, efforts will be undertaken to improve access to quality education for children to develop their skills in which to encourage behavioral changes and social interaction as well to support their mental development through engaging with nature (Hussein, 2010). Looking at the trend, child care centers and schools will provide facilities for learning, and recreational activities to prevent from children involve in undesirable social events such having psychological disorders, anxiety behavior and depression. For the next five years, the Eleventh Plan provides a critical platform to embark on green growth which for sustainability and resilience.
However, in such a way to generate the growth, a reinforced commitment must begin with early education. Children could benefit significantly from the outdoor when they increase their commitment to nature. Implementation of the outdoor learning has been almost applying to the government school and private sector preschool institution around Malaysia. The syllabus is focusing the development of curricula such as Geography, Moral Studies, and Arts. Therefore it’s limit children creativeness. In Malaysia, developing school-based outdoor requires a better understanding of the children’s environment in their everyday life. Children who engage with outdoor activities are commonly interacting with the active play that requires attraction and challenges which direct them to more freely (Heffernan, 2007). It means that experiencing natural environment allows children to engage in physical and social activities. Ajayi and Jibowo (2006), mention that children in the rural area are more curious about their surroundings. It happens when they perceive nature as 1) timeless, 2) varieties in scale, form, color, 3) dynamic, 4) not man-made by human (Prescott, 1987).

8. Research Gap

Recently there are many researchers broad the theory of affordances (Gibson, 1979) in studies of children’s outdoor play in natural surroundings. From the previous research, it shows that many potentials through outdoor by letting them explore freely without any boundaries which can offer them to interact with the plants and animals (Fjortoft, 2001; Heft, 1988; Kytta, 2002; Sandseter, 2009a). For example, children have spent most of the time at school whereby part of their extra curriculum is to engage with outdoor activities. Thus, the outdoor activities were plan according to school syllabus. Table 8.1 summarizes the related studies on children experiencing in outdoor environments.
<table>
<thead>
<tr>
<th>Authors (years)</th>
<th>Concerns / Issues</th>
<th>Major Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colb (1969); Heft (1999);</td>
<td>The ecology of imagination</td>
<td>The imagination of childhood are based on the biographical and autobiographical memories that are relating with relationship between observer and environment, a person and a place.</td>
</tr>
<tr>
<td>Altman and Wohlwill (1978); Herrington and Studtmann (1998); Kahn, &amp; Kellert (2002); Clayton et.al. (2003); Louv (2005); Ismail (2006); Sobel (2008); O'Brien (2009);</td>
<td>Nature and experiences Children and the natural environment Health and Motor Development</td>
<td>Children experience of natural environment requires psychological learning development and imaginative preferences, which natural element consists of plants, animals, topography and environment.</td>
</tr>
<tr>
<td>Fjortoft and Jostein (2000); Fjortoft (2004)</td>
<td>Natural environment as playground and playscape.</td>
<td>The vegetation and topography increase physical competence and motor development. The vegetation provides a variety of play and opportunities with peers.</td>
</tr>
<tr>
<td>Kytta (2002); Chawla (2002) Vadala et.al., (2007); Gill (2012) ;</td>
<td>Children's environments in rural and urban Childhood place attachment, Children sense of place, Playing with plants</td>
<td>Rural setting offers complexity and diversity on children’s play space and elements that allows individual engagements with environment which involve with perceived, utilized and shape spaces.</td>
</tr>
<tr>
<td>Powell (2007) Wolsey and Uline (2010), Singal and Swann (2011),</td>
<td>Children's perception of their learning environment</td>
<td>Outside school learning experiences both structured and less formalized, were perceived by children as being more active, collaborative and challenging contributing to their understanding of their place within the environment.</td>
</tr>
<tr>
<td>Janet (2005); Khaizanun (2007); Noor Ain (2014); Nor Fadzilla (2014); Siti (2016)</td>
<td>School Environment</td>
<td>Interaction with natural elements permit them to be physically, socially and cognitively active and environmental learning.</td>
</tr>
</tbody>
</table>

Table 8.1 A summary of related studies on children experiencing in outdoor environment

Based on Table 8.1, it shows that lack of research examining the children behavior of how the way they construct an idea through the flow design process in relationships to engage outdoor learning through direct contact with nature. Therefore, this study will be a focus on getting children to learn how to brainstorming their thinking which enhances children’s learning skills including exploration and manipulation. In other words, the engagement with the outdoor learning has become part of exploratory play through their interaction and
transactional such as farming activities. This daily life experiences will lead to Lifelong Learning.

9. Literature Review

9.1 Outdoor Learning

The topic of children’s Outdoor Learning (OL) has been surveyed in different ways by researchers with different theoretical starting points, interest and approaches. It is a broad term that includes outdoor play in early years, school compound projects, environmental education recreational, etc. Through outdoor learning, the children were to involve in activities which will help them to gain awareness and respect for their environment (NICE, 2008).

Learning & Teaching Scotland (2011) define that any form of learning which takes place outdoors can be considered as outdoor learning. By being outdoor help children to make contact with nature. Children learn best when they able to move freely and independently. It happened when they used their body’s structures to maneuver around the environment. Known as ‘Proprioception’ which means the ability to hold the body upright and a steady without falling (Gehris et. al, 2015). For children to engage in the outdoor learning experiences creates an awareness towards the importance of greenness and the invisible of environmental issues (Kubota et al., 2013)

As children physically have direct interaction with natural materials, it’s mean that their outdoor learning has given an impact as changes in thinking, feeling and behavior resulting directly or indirectly from what they have experience. In other words, it’s all about a rewilding to be part of nature. It is one the process seeing nature as an extension classroom (Maynard, Waters and Clement, 2011). Figure 9.1.
Figure 9.1: Outdoor as Learning Environment

Dillon et al., (2005) defines the outcomes of outdoor as learning environments changes in thinking, feeling and behavior resulting directly or indirectly from outdoor education. Therefore, outdoor learning environment contributes significantly on personal, social and emotional development and to prepare for the next future of their lives. From nine outcomes, this study already identifies three specific types of impact that relates to research objectives: 1) environmental knowledge, 2) cognitive competency, 3) physical/motor skill development. In parallel over recent years, research has shown that the amount of time and experiences children engage with nature is declining, which knowledge on environmental are getting lesser. Secondly, cognitive impacts concerning knowledge limited within the four walls. And thirdly, children have less opportunity for physical activity each day due to excessive on new technology.

9.2 Experiential Learning

Children have such variety choices when they deal with outdoors rather then they play indoors with all the plastic toys and the high technologies gadgets. For example, like toys, television, telephones and simple little home games may affect their daily life. However, this will not happen if the children given chance to explore
outdoors like seeing majestic wonders that God has created, with magnificent sunrise and sunsets, animal kingdoms, beautiful flora and land formations (Sachs, 2013).

The term ‘Experiential Learning’ by Kolb (1984) is a process whereby experience as a source of learning and development. The concept of experiential learning explores the cycles of human past experiences and emphasizes the connection between the concepts discussed in the classroom and life application (Young, 2002). The learning cycle revolves around four stages of basic learning styles which are experiencing, reflecting, thinking, and acting. Depending on any situation or environment, the learner will base on their experiences in the past. Therefore in the context of children development, it is not just information that transfers from the book to the brain but also related to life skills. Also, the basic of experiential learning is that experience matters.

Educating children always associated with the teachers where they spend most of the day at school and will learn a lot while there. However, the parent’s must have the sense of commitment and initiative to let them to learn or to learn how to solve problems that lead to lifelong learning. Although learning content is important, learning from the process is the principal of experiential learning (Rogers, 2010). Throughout the Experiential Learning process, the children are engaged with the experiencing, reflecting, thinking, and acting. Therefore the experiencing through ‘hands on’ is based on the physical and social interactions with nature that initiated by the cognitive. As mentioned by (Linzmayer et al., 2013), when children highly engaged with nature it will totally change their arousing experiences that were influenced by their cognitive and behavioral. It means if children’s responses very well with the environment, it relate to their personal and interpersonal.

9.3 Outdoor Play and the Child Environment Relationship

In early childhood setting, outdoor play environments generally as a fundamental and necessary component in supporting children’s physical, cognitive, emotional, language, and social skills (Ihmeideh & Al-Qaryouti, 2016). When children
connect with nature, it’s found that the natural playgrounds promoted more challenging in play (Sandseter, 2009b).

According to Zamani (2016), children expressed their skill and creativity through the ranging of cognitive play that offered in the natural setting. In other words, their preferences evolving play milieu within the natural and mixed zones. For example creating games, hiding imagining and playing in groups. Therefore to relate with their previous knowledge of the natural zones during the cognitive play, children are encouraged to use their ability in exploring the nature. Creativity in handling the surrounding helped their understanding of what is nature (Staempfli, 2009). In a play, children gain deep satisfaction and knowledge from following the interest.

Kellert, (2002) defined that there are three different types of usage base on the children’s experiences with nature and the environment. These are direct, indirect and symbolic or imaginary. This happened when they connected with nature that formed three modes of learning in childhood play (cognitive, emotionally, moral). By using all their senses, they can immerse themselves in creative play. In fact from this creative play, it is where they build their sense of wonder and connection to nature (Figure 9.2).

![Figure 9.2: Types of experience in nature and modes of learning in childhood development. (Source from Kellert, 2002)](image)
Children will try to manipulate through physically, socially and emotionally. Play in the environment should be fun, in which children are free to move spontaneously, self-initiated and purposely (J. Piaget, 2007).

At the same time, to have healthier and physical children, most suitable activities are to let them go for outdoor play, to scaffold children’s learning and development (Ginsburg & Milteer, 2012). As children develop the ability to represent experience symbolically, the authentic play becomes a prominent activity. For example playing outdoors, that engaged them mentally, physically, socially, and emotionally. As part of outdoor play with nature, it also tends to reduce stress and anti-social behaviors which decreased their interest and care for the environment.

The natural outdoor environment is attractive with living things which many children love to play in natural environments, (Sobel, 1993; Chawla, 2006; Malone and Transter, 2003; Chatterjee, 2005; Veitch et.al., 2007; Wilson, 2008). Therefore, children who live in the rural area were to have greater opportunity to engage with the natural elements in their play. Also, as suggested by Staempfli, (2009) varies the type of outdoor play environments have the potential to offer an abundance of development and opportunities for children to grow emotionally, socially, and physically.

9.4 Middle Childhood as Unit of Analysis

To date, the Bureau of Population Malaysia (2016) anticipates that 24.5% of the nation’s population were children (0-14 years old). Numbers of children enrolled in Malaysia schools are 5,074,612 were children from preschool to secondary. Out of the total amount, 2,685,403 were in primary school (Ministry of Education Malaysia, 2016). Therefore there is a large population of children in Malaysia which more than a million of young children at aged 2-12, will be urban dwellers who live in the high and medium density residential estates. Another 18.6% will be towards 2040. It shows that the popularity living in urban areas is estimated to increase over the next 24 years. Therefore, children participation in outdoor learning may decrease as they have
less engagement with nature. A concern brought by Louv (2006) as children spend less time outdoors that they are suffering from “nature-deficit disorder”. As a result, the less they engage with nature, the less they learn to cope with the risks and challenges in future.

Children are the groups of society that are more sensitive to the surrounding when there were connecting to nature. Being outdoor will be their first growth development that took place change in thinking, feeling or behavior that directs or indirectly from the natural world. The study explores children’s perceptions and preferences of places based on their presence in an outdoor environment in the rural area, Therefore, the study focuses on middle childhood children (aged 6-12 years) as its respondents. At this age, this is the critical stage of children’s development, whereby children become more appreciative of what’s happening nearby setting. According to Piaget’s theory of cognitive development, children at this age group are at the concrete-operational stage which means they understand through logical thinking and categories (Siegler et al., 2012). Likewise this is the age range when they can assimilate knowledge, understand ideas and how to answer the questions direct or indirect (Shaw et al., 2011). Other reasons, that children at this aged, gain a logical and positive perception of becoming adolescents and adults (Moore, 1978; Rasmussen, 2015).

According to Rouse (2015), the way children organized into groups are by using a multi-aged approach that has better quality and characteristics towards the knowledge of the outdoor environment. For example, through social interaction and affiliation with peers it will have better ways in creating the outdoor learning environment (Australian et al., 2004). The benefits are, they have the ability to interpret their experiences, preferences and feelings when they get connected with the outdoor environment extensively (Kellert, 2002; Strong Wilson et al., 2007).
9.4.1  Middle Childhood Experience of Outdoor Environment

According to Tovey, n.d (2007) children experience the outdoor environment as places of meaning and have significance. The character of a particular space formed by the natural environment (Waite and Pratt 2010). When children get engaged with nature also known as ‘child earth period (Heffernan, 2007). At this age, play in the outdoor environment serves a multitude of developmental functions as well physically, socially and cognitively. Also, Wilson (2008) stressed that when given them an opportunity to play in outdoors, there will be no time limit as they investigate and learn through nature. How children learn and play in the outdoors, has become subjective, because they are a fast learner concerning attitudes and behavior which less taught in the classroom. Therefore, children and adults experience places differently than others through their interpretation. The best environments for middle childhood are the environments that offer the basis of children’s natural need, as they emphasize on play behavior which inspire them to move around and find affordances (Tai, et.al and Knight, 2006). According to Cobb (1969), middle childhood experienced the environment when they are genetically programmed for discovery and exploration and bonding with nature actively. However, Prescott (1987) describe that through play in the outdoor environment stimulates children cognitive skills with the five sensory. In understanding the relationship between middle childhood children’s physical and cognitive development, it needs to remember as this are fundamental to their growth of development and performances. Natural elements have many loose parts that encourage children to have discovery during the exploration and observational with nature (Wilson, 2008). Therefore, there is a need to understand children’s view and preference for being outdoor which benefits their cognitive, social and physical development.

In regards to this study, to achieve the research aim which is to investigate how the environment shapes the middle childhood children’s behavior through outdoor learning in the rural area as a second classroom to stimulate children’s growth and development, are the farming activities. But why farming? Farming is refers to
agricultural activities either in the urban or rural area, (Kementerian Tenaga, Teknologi Hijau dan Air, 2010). Recently school garden programs pair with classroom syllabus. These garden activities may promote academic achievement, fruit and vegetable consumption, physical activity, etc (Economic Planning Unit, 2015). To match with the school curricula, educators have use garden-based pedagogy in a broad range of subjects including science, math, social studies, etc. Standard curriculum by the Ministry of Education in Malaysia was based on the system that emphasized on grades, high scores and the position in the classroom, which need memorization. That makes they have less direct contact with the outdoor environment.

9.5 Children Participation

Since the 1960s and 1970s, the value of children’s participation in design has acknowledged in many research studies. For example, international organization project such as the UNESCO project Growing Up in Cities and UNICEF project on “Child-Friendly Cities” focuses on children participation. Also as part showing off children’s creative capacities. (Lundy and Mcevoy, 2007) mention that children have a right to express their views and their voices should be heard and respected by others too. In doing research with children involves much exploration and where the variables are unknown from the outset (Creswell, 2010). In conducting participatory research with children presents many challenges that will emerge during the data collection. Therefore it is important that adults have a better understanding their needs, ideas interest and viewpoints in the planning and design process. (Boyden and Eenew, 1997).

10. Theoretical Framework

10.1 Inquiry Based Approach

The Inquiry based approach can be used as one of the methods to include children in the designing process. According to Zan and Escalada, (2011), there are various methods has been used to involve children in the design process. As mention
by Felstiner (2004), these methods can be utilized either independently or as group discussion or can combine to create a project like the Mosaic approach (Clark and Moss, 2001).

10.1.1 Mosaic approach

This research based on a particular framework known as Mosaic approach (Clark, 2007) which for listening to young children’s views and ideas about living and learning from the environment. Several methods one in which children’s involves the use of observation, photo book, site visits, map preparations, interviews, model making, use of a camera, one to one interviews and interviewing teachers and parents (Clark and Moss, 2001).

10.1.2 Constructivism

The Inquiry Based Approach is base on constructivism theory which based on the learning theories of Piaget (1964) and Vygotsky (1978). Within the context of constructivism the process will engage children in asking and answering questions, making a hypothesis, exploring discussing, confronting challenges and reflecting results (Low and Shironaka, 1995). In the context of children’s outdoor learning with the outdoor environment, constructivism means the children can develop their knowledge of the surrounding environment through direct contact with nature (Spencer and Blades, 2006). Therefore the combination of direct and tactile experiences with physical properties will have the sense of ownership and connection to what they experience and learn from nature by supporting children’s outdoor learning to become more efficient.

11. Research Underpinnings

The underpinnings of this study are:
(1) Waldorf and 2) Naturalistic Intelligence by Howard Gardner.
11.1 Waldorf

Waldorf school was founded by Austrian philosopher/educator Rudolf Steiner’s in 1919, which he believes that children should experience the environment through their hands, heart, and bodies (Leong and Hui, 2016). The fundamental of Waldorf programme in the education system based on slow learning which different from common education methodology. In Waldorf, they believe that slow learning promotes natural growth and learning in freedom (Lee, 2016). Learning from Waldorf experience, Easton (1997) stated that children should give opportunity to engage themselves using ‘heart and hand’ as well as ‘heart’ during the design process that allows they understand that learning is their responsibility and not a competition with their peers. This process will lead to lifelong learning. Waldorf provides a framework that this approach works on children’s natural creativity and full of imagination which can nurture through nature, art, storytelling, movement, etc. Fundamentally, Waldorf is about the process of children development and preparing themselves for next of their journey.

11.2 Naturalistic Intelligence (Howard Gardner)

In 1996, Dr. Howard Gardner has added the Natural Intelligence to his list of Multiple Intelligence which is the first addition to the original seven (Silveira, 2007). In the field of educations, intelligence is a regular cognitive capacity people are born with. There are nine Intelligences of Multiple Intelligences that he already discovered. According to Gardner’s Multiple Intelligence theory, people possess at least nine distinct intelligence (Gouws, 2007). His theory of Multiple Intelligence can be categorized nine which are 1) verbal-linguistic, 2) logical-mathematical, 3) musical, 4) spatial, 5) body-kinesthetic, 6) intrapersonal, 7) interpersonal, 8) naturalistic, 9) existential. It is of the utmost importance that this intelligence is different from each individual. In the context of this study, that relates to the outdoor learning, the intelligence has to do with observing, understanding and organizing patterns in the natural environment. Therefore, children with heightened naturalistic intelligence have the ability to recognize patterns in nature and classify objects; mastery the taxonomy, sensitivity to other features of the natural world an understanding of the
variety of species. Play in natural environments fosters children’s naturalistic intelligence.

12. Scope of Study

The study will be conducted in the landed property which located at Kg Gunung Pasir, Kuala Pilah, Negeri Sembilan. The land is located in the rural area, of which the Malay rural landscape is typified by its greenery and close-knit community. The house itself has its courtyard with an enormous open space in front and back. Surrounded by the fruit trees vary sizes and different species. The house is selected because the scale of the greenery that can access to natural material easily. For example the species of fruit trees such as Nephelium lappaceum (Rambutan), Punica gratum (Pomegranate) Musa spp. (Banana) and Durio zebathinus (Durian), used as soft landscape elements in the garden (Ismail, 2003). As mention by Kaplan, S & Kaplan, R (1987), they define a restorative landscape which refer to the rural landscapes as “an environment that can foster fatigue recovery”. This landscape characterized by three main criteria. The first is the tangible benefit of the landscape. The second is the desire to work the soil and see things grow and the third involves sustained interest which enables people to see participation in the environment as a valuable way to spend time and as a diversion from their routines. (Figure 12.1, 12.2. 12.3 and 12.4)
Figure 12.1: The main road of Jalan Kampung Gunung Pasir

Figure 12.2: Front and side yard occupied by fruit trees and ornamental plants.
Figure 12.3: Photographs of the open space which afforded children opportunities to have free play.

Figure 12.4: The backyard areas which have 2 ponds for fishing activities.

13. Significance of Study

The study is significant to response to the problem statement and research gap that have been mentioned earlier in the research proposal:

1. The study adds to the body of knowledge that the outdoor learning education afforded in children performance through participating in design process based on farming activities.
2. A teaching material which emphasizes the flow of the design process when each time children given the opportunity to design the space base on children’s preferences and perceptions.
14. Research Design

As the study aim to interpret how the environment shapes the children’s behavior through outdoor learning in the rural area as a 2nd classroom to stimulate the children’s development, therefore it will involve some number of stages that offer children that aged between 6-12 years old. Hands-on collaborative and reflective learning experiences, whereby at the end of the day, children able to understand the design process from primary until the implications of the conceptualization for the farming practice. Throughout the experiential learning includes the possibility children able to learn from natural consequences, mistake, and successes.

This study divided into three stages, which the first phase was Preliminary Study with children aged 12 years old conducted at Sekolah Kebangsaan Bukit Indah, Johor. For the preliminary study, the sample consists of 92 primary six students. Permission was sought from the school. The administered questionnaires have three different variables for each subject, based on their childhood memories that involved their childhood play in nature. The context was in a range of urban setting which surrounded by residential and commercial areas. The function of this preliminary study was to seek a greater understanding of children’s perceptual responses on play memories with nature from at early stage of their childhood to middle childhood. As been mentioned by Chawla, 1998; and Vadala et.al., 2007, many childhood memories come from nature. Therefore it creates place identity that gives an individual sense of intense of an emotional experience for a special place or environments. The questionnaire form for an individual was designed into three sections; Part 1, 2 and 3. The individual questions comprised of 20 questions. In specific questions, Part 1 focuses on personal data. Part 2, on the enjoyment with nature and Part 3, the children preferences play with nature that reminds their childhood play. The personal data contained demographic such as age and gender. On the enjoyment of, nature and types of preferences, childhood play was based on their experience playing outdoor. This involves of play accompany, types of play space, frequency of play outdoor, childhood play which includes natural materials, the relationship between plants and individual, and feeling of attachment when interacting with nature. The survey lasted for about one hour for them to complete the questionnaires. From the preliminary
findings on children’s experiences in natural areas, mostly preferred to play at the playground, followed by padang and seaside or riverbank which play become a reality. At this age group, they begin to venture beyond the immediate vicinity of their home environment (Moore and Young, 1978). Through the exposure to nature, the children found the affordances afford different qualities for each (Heft, 1988). For example, children preferred to use clay as their play object which easier for them to reshape according to their subject and interest. According to Kytta, (2002) theory of affordances is view as children perception that triggers their sensory and motoric actions stimulated by natural elements. When children in this preliminary study were asked what was remarkable or memorable about their childhood experiences being outdoor, their answers were consistent and significant filled with sensory references. These sensory references did not appear to be impacted by gender or age of the child because this involves pretend play that spontaneously communicates with peers and exchange information. Therefore, the results presented that many outdoor places such as the playground, padang, school compound, etc. were significant for children individual play that gives them a sense of independence that creates strongest play memories from their childhood.

The second phase is the Pilot Study which to be conducted at Twinkle Tots Day Care Centre which is a preschool and kindergarten that providing a better early education for the children, aged 2-6 years old. The school offers various activities to support children’s development as well enhancing their learning process with lots of fun. This activity including gardening and art activities. The unit of analysis for this research will be children aged 6 (from the school) and 12 years old (from the same school - alumni). The purpose of this pilot study is to introduce the basic of environmental learning as a direct and experiential encounter with the landscape elements such as vegetation, animals, landform, and interaction with their peers.

And for the third phase, the actual setting for data collection to be conducted in the rural area in the state of Negeri Sembilan which involved a random sample of children aged 6-12, (they are the same children during the pilot study). The purpose to evaluate what children can learn from the design process on outdoor learning base on farming activities that lead to experiential learning. Prior to the children participation in the farming activities, preschool operator and teachers will be ask to supervise before the farming activities took place. Whereas the brainstorming session already
done during the pilot study. In the initial stage of the farming planning, children were invited to have a brainstorming session on what is farming landscapes and the design process flow.

**Sampling**
This study will involve a random sampling of 15-20 children (age between 6-12 years old) from the same school. For age 7 -12, are the former students that we invite them to participate in this study. The site was located in a rural area in Kuala Pilah, Negeri Sembilan.

**Instruments**
*Self-button pin video camera badge* - Children’s behavior and voices will be videotaped during the pilot and actual study.
*Voice recorder* - to listen their preferences and explanations and words about nature.
*Camera* – Each child will be given a camera for them to take a picture.

**Data Collection**
Data will be collected from children’s drawings, photographs, interviews, questionnaires, log book.

**Data Analysis**
Data will be analyzed through several methods. It includes:
Photography, log book, video and voice recording

Children photographs will be analyzed, children interview and voice recordings will be transcribed and analyzed using KH Corder (for qualitative content analysis), to see children conversations and explanations.
15. Anticipated Findings

The study anticipated the following findings:

1. A programme that supports children’s engagement and learning, which provides better opportunities and meaningful interactions between children, nature, and educators.
2. A list of collaborative learning aids through a programme that supports outdoor education that not only learning about nature but also learning through nature.
3. Outdoor learning should not be practiced only in primary school; the high school students will be more expressed, much engagement and enjoyment outdoors.
16. Flow Chart of Research Design
# 17. Gantt Chart

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### YEAR 1

- **Growth of theoretical framework/background**
- **Participate in Collisions between UTM, UTM AND UiAM**
- **Review of relevant literature**
- **Submission/Presenting for APELA Conference, Seoul**
- **Preliminary Study**
- **Submission for The International Play Association IPA 2017 - waiting for acceptance in January 2017**
- **Plot Study**
- **Writing of Research Proposal**
- **Writing Final Proposal** (Submission of Conference Paper/ Journal)
- **Actual Data collection (follow the Master's Academic Calendar)**
  - Preparation materials (site plan, equipment, record forms, tables)
  - Data collection at site surveys based on research parameters
- **Data Analysis and Evaluation**
  - Processing data obtained at site surveys
- **Supervisor Review and Input on Findings**
- **Submission of Conference Paper/ Journal**
- **Developing and Writing of Draft Thesis**
- **Preparation for Thesis Submission**
  - Submission of Final Draft
  - Submission of Final Draft
- **Viva Voce**
18. References


Australian, T., Childhood, E., Attwood, T., Barreda-, C., Boardman, M., Butterworth, D., … Patterson, C. (2004). In this Issue, 29(2).


Sachs, N. Exploring the connection between nature and health, TherapeuticlandscapesNetwork (2013).


Tovey, H. (2007). Creating Challenging Outdoor Play Spaces.


Zamani, Z. (2016). “The woods is a more free space for children to be creative; their imagination kind of sparks out there”: exploring young children’s cognitive play opportunities in natural, manufactured and mixed outdoor preschool zones. Journal of Adventure Education and Outdoor Learning, 16(2), 1–18.

19. Appendix

Site Plan

Laman Tamara

Not to scale

26-Apr-16