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

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Introduction I Statement of problems I Research gap I Aim and objectives I Research questions I Research framework
INTRODUCTION

HOME-SCHOOL JOURNEY

Home, school and recreational facilities are three of the main setting that is referred as institutional triangle in children's lives.

The settings are created by adults that are embedded with rules about how and where the children should play and learn with limited engagement of outdoor environment.

Concerned with this situation, this study has recognized home-school journey as a part of children's everyday routine place that allows children to play and stimulates three aspects of children performance which are physical, cognitive and social.
STATEMENT

PROBLEM

School
- Much time spent at school (elementary school and religious school)

Parent
- Activities after school structured by adult
- Adult believe that play is wasting time
- Carting to school

Physical environment
- Distance to school
- Public space reduced

Limited time

Low opportunity for outdoor play

Low opportunity for independent mobility

Children
- Low performances
- Low engagement with nature
- Low sense of community
- Low experience and knowledge on neighborhood
The studies mostly concerned on the children's mode of travelling to school toward the impacts of their spatial cognition development, safety issues and social control.

Less concerned on children's performance in home-school journey especially in rural area.

<table>
<thead>
<tr>
<th>Studies</th>
<th>Context</th>
<th>Concern</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthews (1984), Joshi et al. (1999), Ahmadi and Taniguchi (2007), Thommen et al. (2010)</td>
<td>Urban, Rural</td>
<td>Mode of travels and its impacts towards cognitive development: Spatial knowledge through children's ability of cognitive mapping</td>
<td>Age, travel mode, spatial skills and ability to develop map</td>
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<tr>
<td>Hillman et al. (1990), Roberts (1995), and Shokoohi et al. (2010)</td>
<td>Urban</td>
<td>The level of independent and their parent's concerned of safety</td>
<td>Travel mode and safety</td>
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<tr>
<td>Ross (2007), Romero (2010),</td>
<td>Urban and rural</td>
<td>Experience of children's independent mobility to school, the meaning, engagement and interaction</td>
<td>Children's views and perception</td>
</tr>
<tr>
<td>Black et al. (2001)</td>
<td>Urban</td>
<td>Factors Encouraging walking</td>
<td>Travel mode</td>
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<td>Pooley et al. (2005)</td>
<td>Urban</td>
<td>The journey to school continuity in Britain since 1940s and change</td>
<td>Changes of mobility from past and present</td>
</tr>
<tr>
<td>Jensen (2008)</td>
<td>Urban</td>
<td>The health benefits of independent mobility to school</td>
<td>Travel mode</td>
</tr>
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</table>
AIM AND OBJECTIVES

To investigate children’s experiences during a home-school journey in the rural environment in order to identify the actualised affordances which stimulate their performances.

Objective 1: To identify how children perceive home-school journey as a play and learning environment

Objective 2: To investigate children’s physical, social and cognitive performance in home-school journey

Objective 3: To identify factors that influence children's performance along the home-school journey
**Independent Variables**

- **Properties and Attributes**
  - Rural setting
  - Physical elements (Built and Natural Elements)

- **Types of Mobility**
  - Independent Mobility
  - Dependent Mobility

**Dependent Variables**

- **Children’s Experience**
  - Movement and action

**Actualized Affordances**

- Level of Affordances
  - Perceived, Utilized and Shaped

- Types of Affordances
  - Positive and Negative

**Taxonomy**

**Children’s Performances**

- Physical, social and cognitive
02 UNDERPINNING of the study

Theory of Affordances | Ecological Developmental Psychology
Affordances of an environment are associated with the elements which offers or provides interaction and manipulation for the user.

**Level**
Perceived, utilised, and shaped affordances

**Types**
Positive and negative affordances

**Taxonomy**
Flat, relatively smooth surface, relatively rough slopes, greenery and wildlife, graspable/detached objects, attached objects, non-rigid attached objects, climbable features, aperture, microclimate, moldable material, sociality and water.
Children's developments are influenced by the multileveled social, material and cultural contexts. Thus, the theory proposed five levels of ecological system:

- **Microsystem**: Home, school, day-care center, emotion, language, behavior, discipline
- **Meso system**: Home-school journey and after school activities, communication, interaction
- **Exosystem**: Parent’s work place, interest
- ** Macrosystem**: Socio-culture and socio-economy, ethnicity, belief and custom
- **Chronosystem**: Socio-historical, lifestyle
METHODOLOGY
of the study

The study site | Unit of analysis | Methods | Data analysis
54 students of S.K Sri Gunung Pulai, aged 9-11 years were participated in the survey. The study focus on middle childhood children since it is at this age that children are allowed to travel unaccompanied to school.

<table>
<thead>
<tr>
<th>Age</th>
<th>Girls</th>
<th>Boys</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>28</td>
<td>54</td>
</tr>
</tbody>
</table>
Types of children's mobility to school in the village have been classified into two categories including independent and dependent mobility. Independent mobility involves walking and cycling to school, either alone or with peers without adult supervision. Whereas, dependent mobility includes carting to school by parents with cars or motorcycles.

<table>
<thead>
<tr>
<th>Age</th>
<th>Independent</th>
<th>Dependent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Walk</td>
<td>Bicycle</td>
</tr>
<tr>
<td>S5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>S4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>S3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>17</td>
</tr>
</tbody>
</table>
The visual method was selected because it was the best way for young people to communicate, express, share and analyse their knowledge which sometimes cannot be written or spoken.

This method provides first-hand experience of the journey and give opportunity for field researcher to observe the children’s behavior responses without interfering their action which allowing them to act naturally along the journey.
## Research Methods

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Method</th>
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<tbody>
<tr>
<td>To identify how children perceive the home-school journey as a play and learning environment</td>
<td>INTERVIEW PARTICIPANT OBSERVATION</td>
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<tr>
<td>To investigate children’s physical, social and cognitive performance in home-school journey</td>
<td>INTERVIEW PARTICIPANT OBSERVATION</td>
</tr>
<tr>
<td>To identify factors that influence children's performance along the home-school journey</td>
<td>DRAWING AND INTERVIEW PARTICIPANT OBSERVATION</td>
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One sheet of A3 size paper and a set of stationary box were provided to each child for mapping drawing task. The children were asked to recall and draw their experience of home-school journey, which consist of any important elements along the journey such as their home, elements that they have encountered, and their school. The interview were done individually for their interpretation of the drawing. The conversation were recorded via voice recorder.
Participant observation includes video recording, observation and research diary for reviewing day-to-day children's activities.

The method was conducted during children's home-school journey in three days, which takes about 10 minutes of video recording. The local residents assisted the field researchers by giving ride on their motorcycle during the survey.
**METHODS OF ANALYSIS**

**Descriptive Analysis**

Drawing and video recording

Identify the elements encountered along the journey.

Analysed the frequency of elements appeared along the journey, and only significant elements were coded into the categories.

Twelve categories emerged from the qualitative analysis: vegetation, topography, water bodies, animal, microclimate, sociality, graspable elements, climbable elements, non-rigid attached elements, attached elements, transportation and man-made.

**Content Analysis**

Semi-structured interviews based on map drawing and research diary from participant observation were transcribed and analysed using qualitative content analysis in accordance with themes that emerged in the map drawing.

Analysed words or phrases from the children to identify the children's behavioral responses. Therefore, children's words on their experiences during the home-school journey were bracketed and coded into twelve categories.
04 FINDING AND DISCUSSION of the study

Children’s experience of home-school journey I Properties and attributes of home-school journey I Children’s Mobility I Children’s Performances I Affordances of home-school journey
The study found that the children were engaged with continuous activities along the journey and perceived the home-school journey as their play and learning space.

However, the study found that physical setting of the journey and children's mobility to school are factors that influence their physical, social and cognitive performance.
The experiences include seeing durian tree, cycling down the hill and feeling fast, cycling with friends, feeling the excitement, negotiating with friends, seeing cat, seeing friend house, seeing bird and cycling up the hill and feeling tired.
The experiences include walking on shifting topography (uphill and downhill), feeling tired walking uphill, seeing the silhouetted figure of oil palm tree, walking on different texture of the road (sand and asphalt), feeling calm by the birdsong, hearing the noisy sound of a machine, seeing orchard, seeing squirrel, seeing and feeling afraid of monkeys, seeing dying durian tree and seeing flower dropping.
The experience includes crossing over a stream by a bridge, seeing a stream, seeing a duck, seeing a small shop and seeing a fruit tree.
The experience includes seeing hornbill, seeing fruit tree, waving hand to guard, seeing fence, feeling exciting while going uphill, sling shooting wild boar and monkey, seeing friend house, crossing over a stream by a bridge, seeing stream, and seeing his teacher’s house.
Children with independent mobility dominated 65% of the affordances.

The children with independent mobility were involved with perceived, utilised and shaped affordances while the children with dependent mobility only involved with perceived and utilised affordances.
Children have greater engagement with 340 (53%) of natural elements than 301 (47%) of built elements. The finding suggests that children prefer to play with natural elements over built elements because the village has a diversity of nature elements that can easily found during the journey.

In addition, the quality of play tends to be richer in a natural environment than built elements.
Children experience of the home-school journey was offered full of play opportunities for children's performance in physical, cognitive and social.

A sizeable number of cognitive performance (n=130) suggesting that the home-school journey was an encouraging learning environment for children to practice their observational skills and awareness of their surrounding by noticing the change of fruits color and recognizing the types of trees and birds.

For physical performance, the children were involved with movements and perform some basic skills during the journey (cycling up and down hill, chasing chickens, sliding on a wet apron, climbing fruit tree, swimming in a stream and sling shooting monkeys).

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**CHILDERN’S PERFORMANCES OF HOME-SCHOOL JOURNEY**

<table>
<thead>
<tr>
<th>Performances</th>
<th>Built elements</th>
<th>Natural elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>27</td>
<td>57</td>
</tr>
<tr>
<td>Social</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Cognitive</td>
<td>41</td>
<td>89</td>
</tr>
</tbody>
</table>
The journey also encourage the children to involve with social activities includes chatting, negotiating, and helping each other. For example, the image shows that the children were helping each other while cycling back from school.
AFFORDANCES OF HOME-SCHOOL JOURNEY

LEVEL OF AFFORDANCES

The home-school journey offered 220 affordances to the children, engaging them with 125 (57%) perceived, 92 (42%) utilised and 3 (1%) shaped affordances.

It means that children's home-school journey in the rural area is more engaged with passive affordances than active affordances. (associated with emotion and senses, including sight, audio, touch, smell and taste).
The home-school journey afforded six times more positive affordances (n=188) than negative ones (n=32).

The negative affordances were associated with an uncomfortable feeling afforded by the elements. For example seeing lightning and thunder, feeling hurt by raindrop while cycling, and feeling hurt while cycling over the speed bump.

Therefore, the result suggests that the children were perceived the home-school journey in the rural area as their play and learning space.
Children engagement with the elements in a rural area was classified according to Heft's and Kytta's taxonomies of affordances (Heft, 1988; Kytta, 2002).
Manmade elements (n=35) were the most dominant features noted by the children. For example, the images show that the smaller shops were likely to be very interesting for children buying snacks. While the sculpture were utilized as a waiting area, which provides shelter from heat and rains. The situation shows that children’s functioning was influenced by the functional properties of the elements instead of the appearance or color.
While for the vegetation category (n=33), the children were clearly sensitive and familiar with the vegetation around the village. For example, the images shows a child experienced with the vegetation to find bats in the furling leaf of banana tree. This finding suggests that the children were recognized a hiding place for bats that inside the furling leaf through his self-exploration during the journey.
Affordances of home-school journey for children’s performances | Published and conference paper
CONCLUSION

**Home-school journey properties and attributes**
- Complexity of natural elements
- Dynamic changes
- Tropical microclimate
- Flexible place to play
- Manipulable of plentiful of loose parts

**Independent Mobility**
- Walk, bicycle
- Free movement

**Affordances**
- Perceived
- Utilized
- Shaped

**Children’s Performances**

**Physical**
- Movement, skills, manipulation, utilizing

**Cognitive**
- Adaptive, evaluation, observing, recognizing, memories, sensory, understanding, imitating, emotions, preference, creativity, making decision, problem solving

**Social**
- Conversation, friendship, helping, sharing


THANKS FOR YOUR ATTENTION