

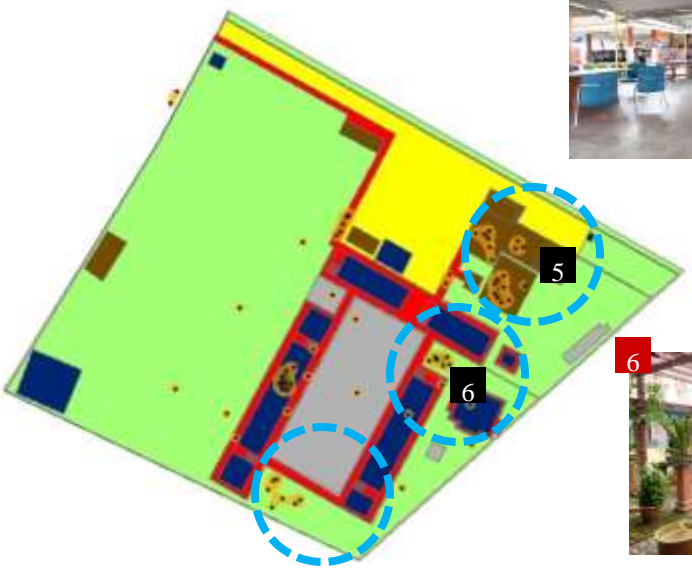
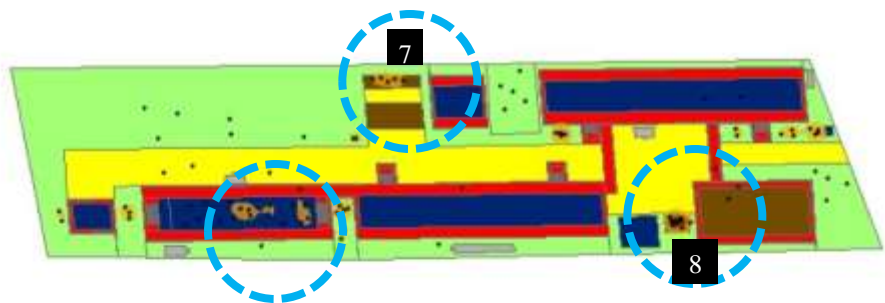
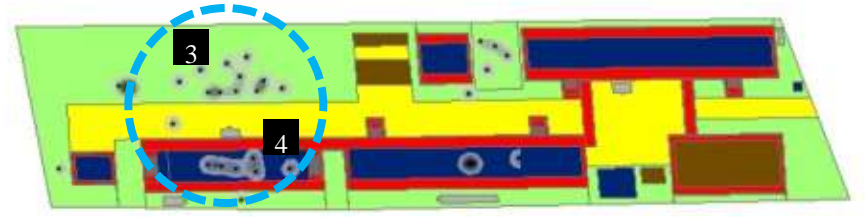
RO#1	VARIABLES/ ITEMS	RESULTS AND FINDINGS
	Place affordances	The opposing trends during NL and IL at both schools

NON-FORMAL LEARNING SESSION

INFORMAL LEARNING SESSION

Urban school

Rural school



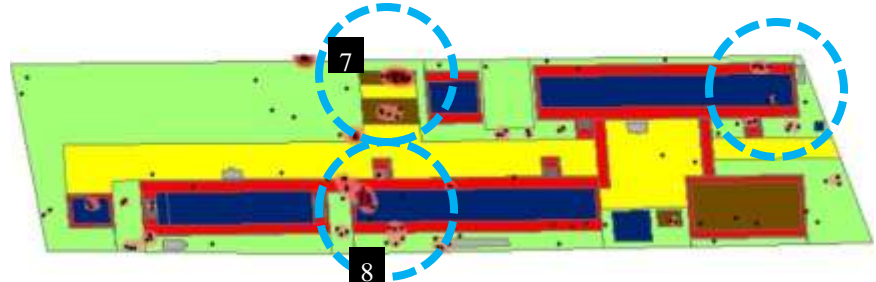
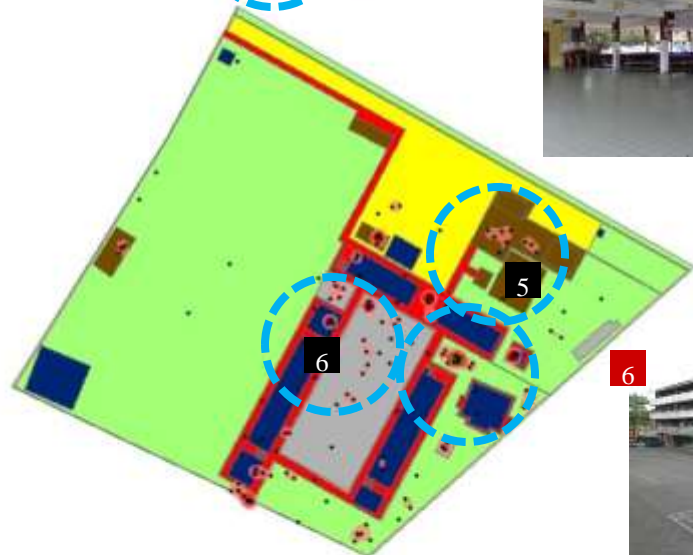
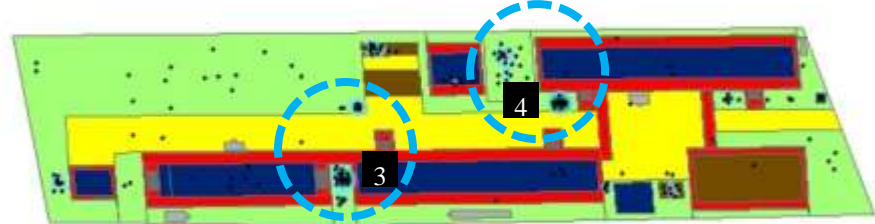
	VARIABLES/ ITEMS	RESULTS AND FINDINGS
RO#2	Place preferences	Different trends of hotspots areas for favourite (concentrated) and disliked (scattered) places at both schools

FAVOURITE PLACES

DISLIKED PLACES

Urban school

Rural school



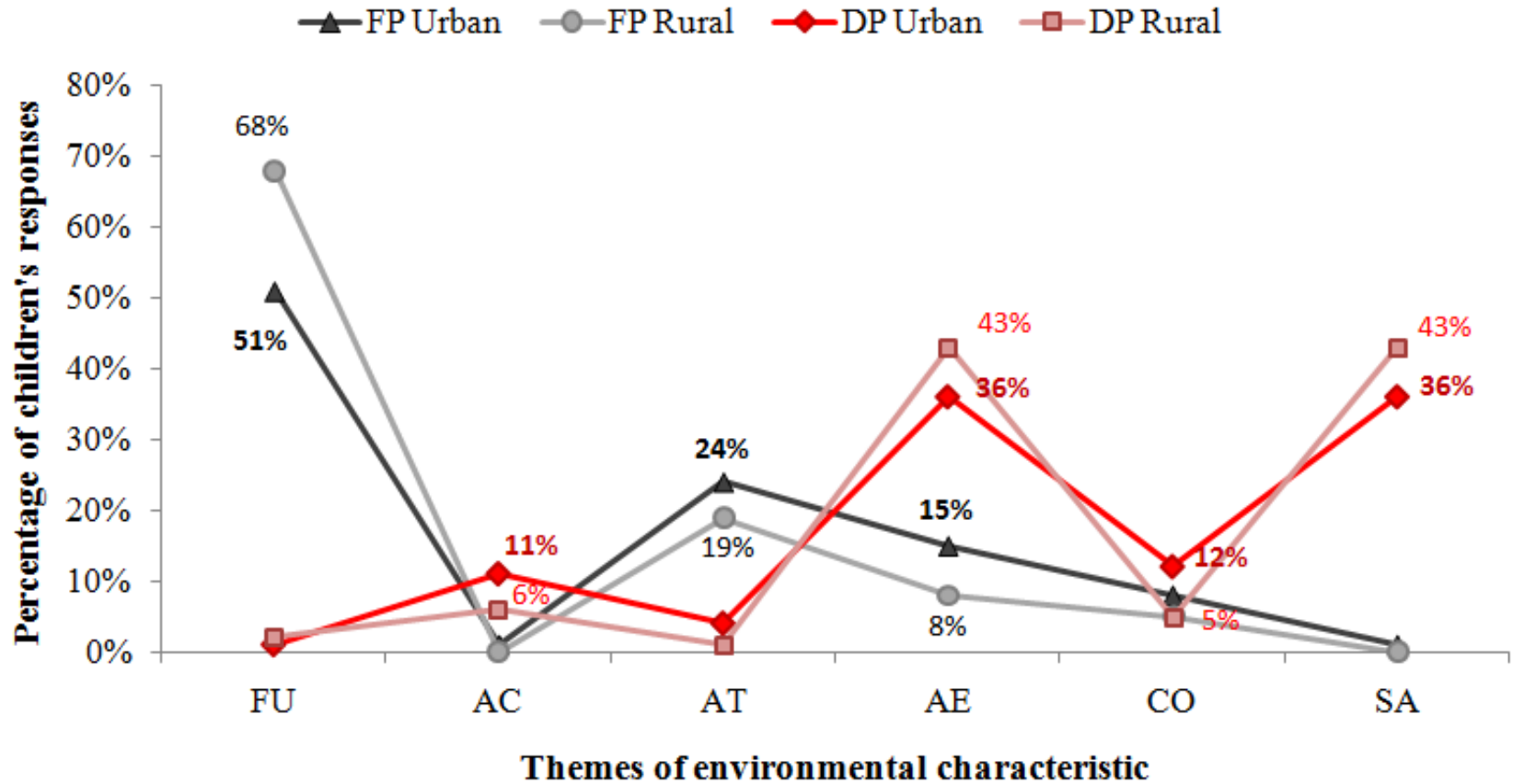
RO#2

VARIABLES/ ITEMS

RESULTS AND FINDINGS

Influential factors

Different environmental characteristics for different place preferences

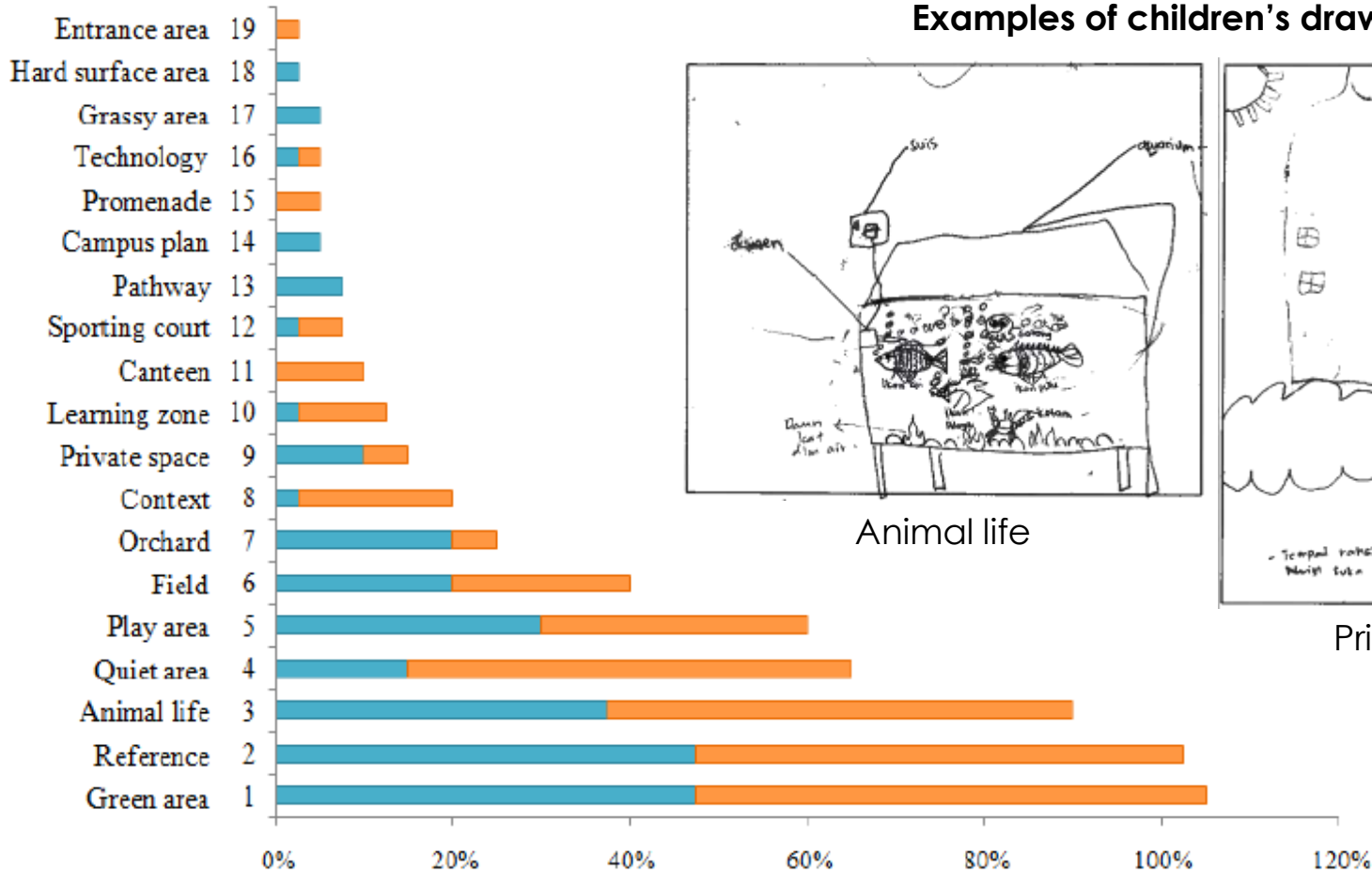


FU= Functionality; **AC**= Accessibility; **AT**= Attractiveness; **AE**= Aesthetic Quality;
CO= Comfortability; **SA**= Safety

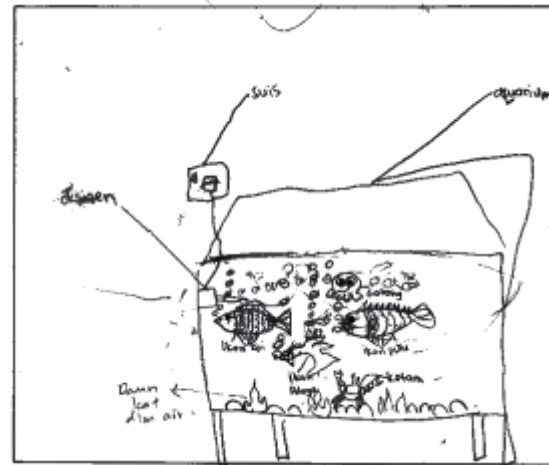
Ideal school grounds

19 relevant design patterns were identified from children's drawings

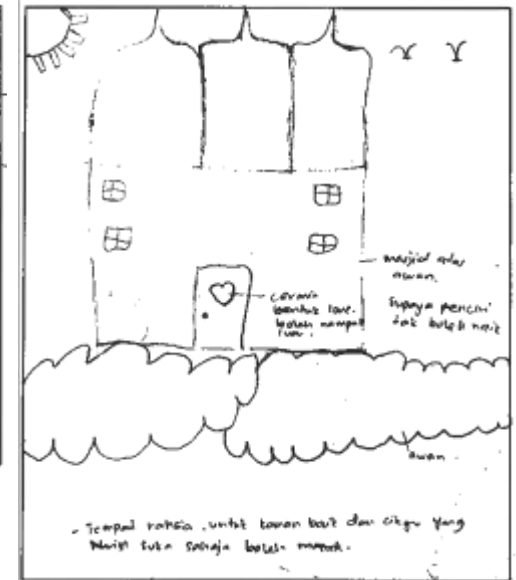
Design patterns



Examples of children's drawings



Animal life



Private space

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Urban school (n=40)	48%	48%	38%	15%	30%	20%	20%	3%	10%	3%	0%	3%	8%	5%	0%	3%	5%	3%	0%
Rural school (n=40)	58%	55%	53%	50%	30%	20%	5%	18%	5%	10%	10%	5%	0%	0%	5%	3%	0%	0%	3%

Percentage of drawings

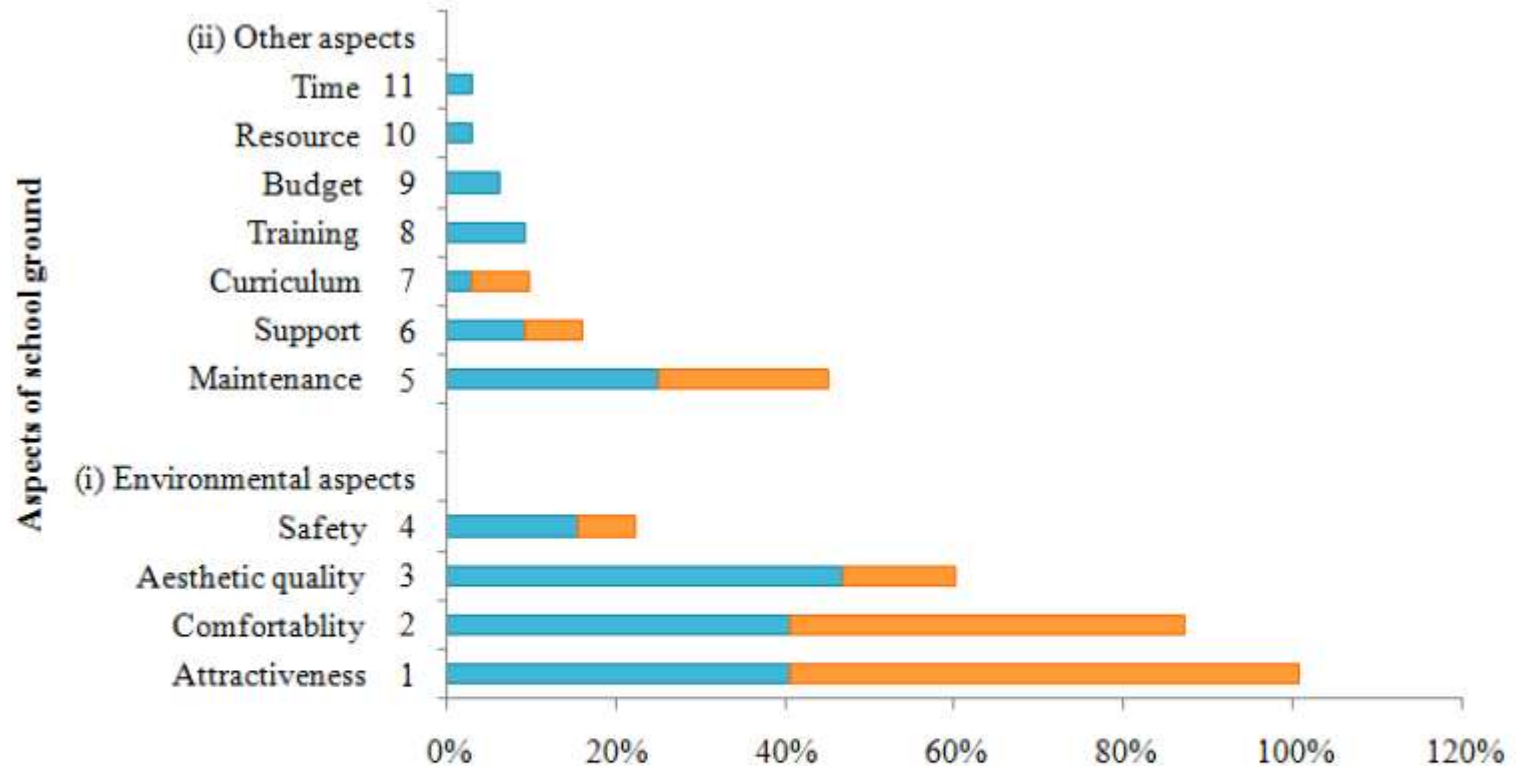
RO#4

VARIABLES/ ITEMS

RESULTS AND FINDINGS

Ideal school grounds

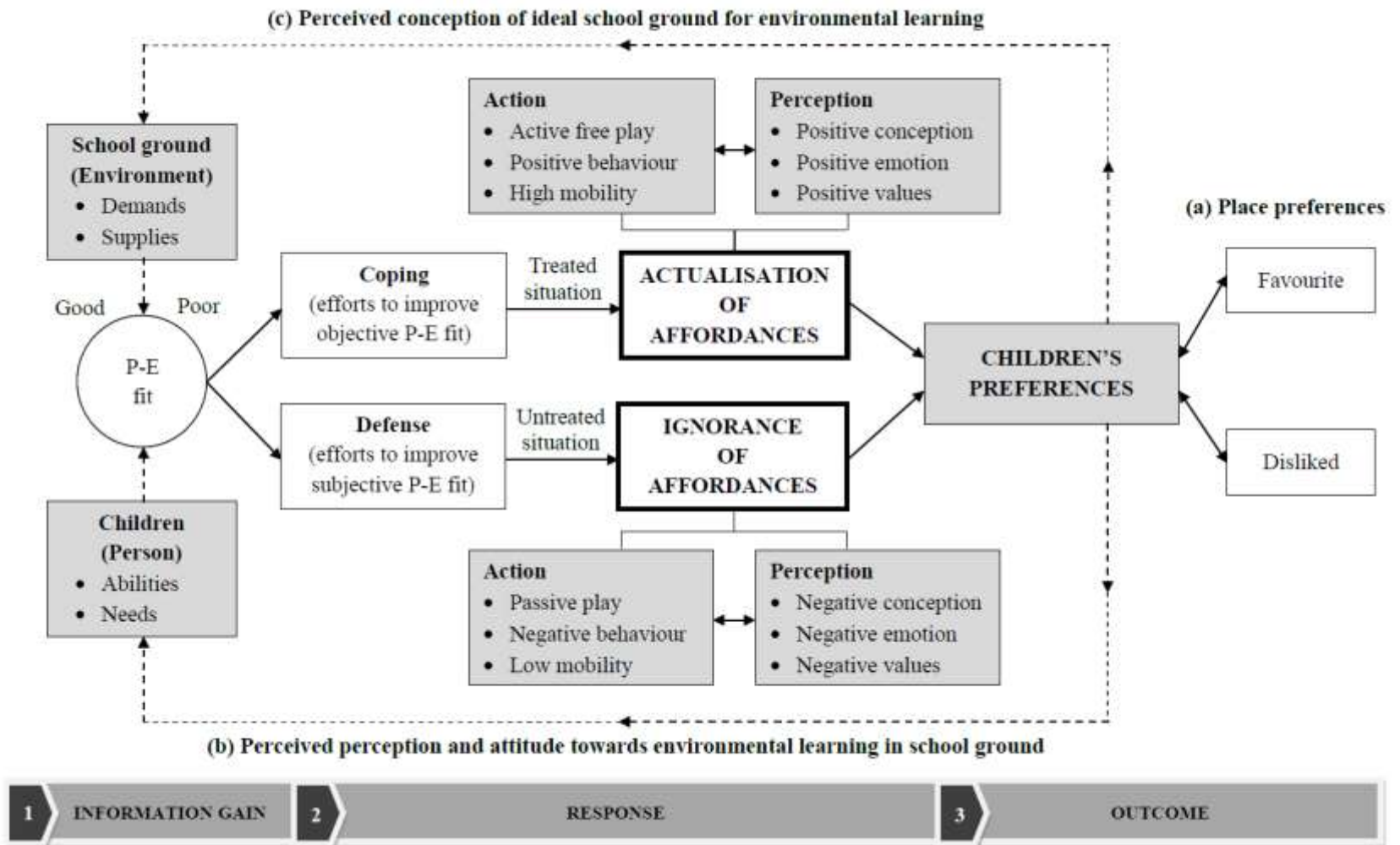
6 relevant design patterns and the aspects considered by teachers for SG environment



	1	2	3	4	5	6	7	8	9	10	11
Urban school (n=32)	41%	41%	47%	16%	25%	9%	3%	9%	6%	3%	3%
Rural school (n=15)	60%	47%	13%	7%	20%	7%	7%	0%	0%	0%	0%

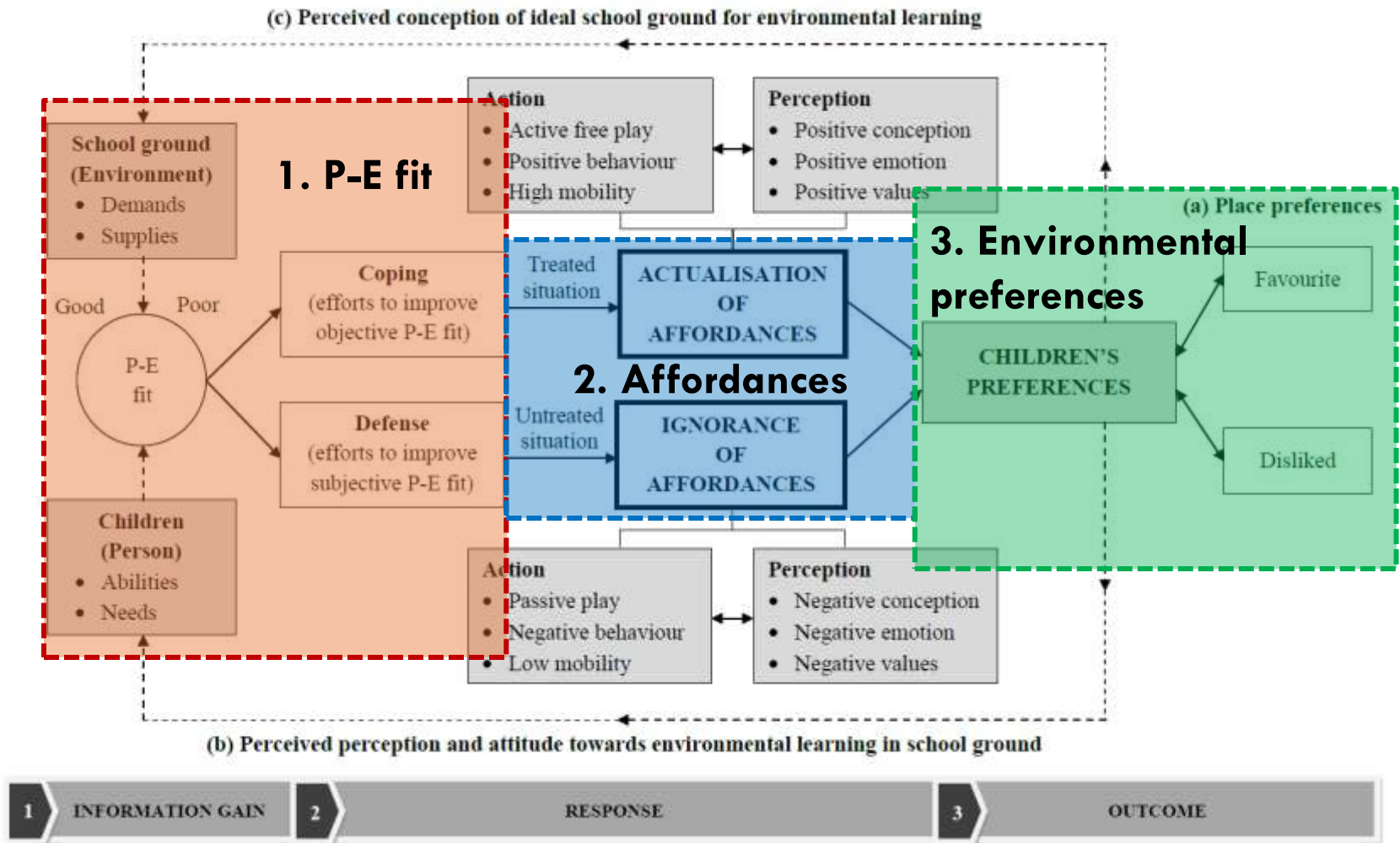
Percentage of responses

Conclusion & Theoretical Implications



The Model of Child-Environment Transactional Process

Conclusion & Theoretical Implications



The Model of Child-Environment Transactional Process

Conclusion & Theoretical Implications

The reconceptualisation of environmental learning through children's outdoor play

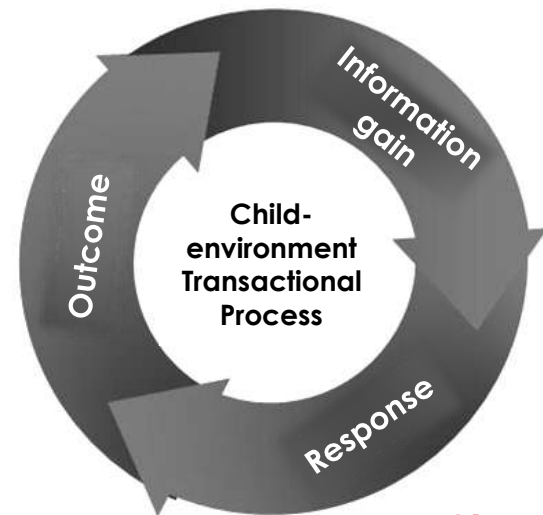
- The **transactional process** is considered as **children's environmental learning**.
- It involves **3 stages**:
 - **Information gain**:
The recognition of environmental potentials and constraints that indicate the degree of fit between children and environment.
 - **Response**:
The improvisation of P-E fit towards the actualisation or ignorance of affordances.
 - **Outcome**:
The formation of environmental preferences.

Stage 1.

Observation, exploration, stimulation, recognition and cognition of the environmental information

Stage 3

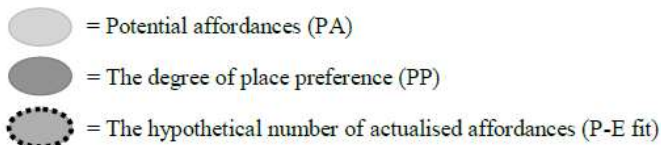
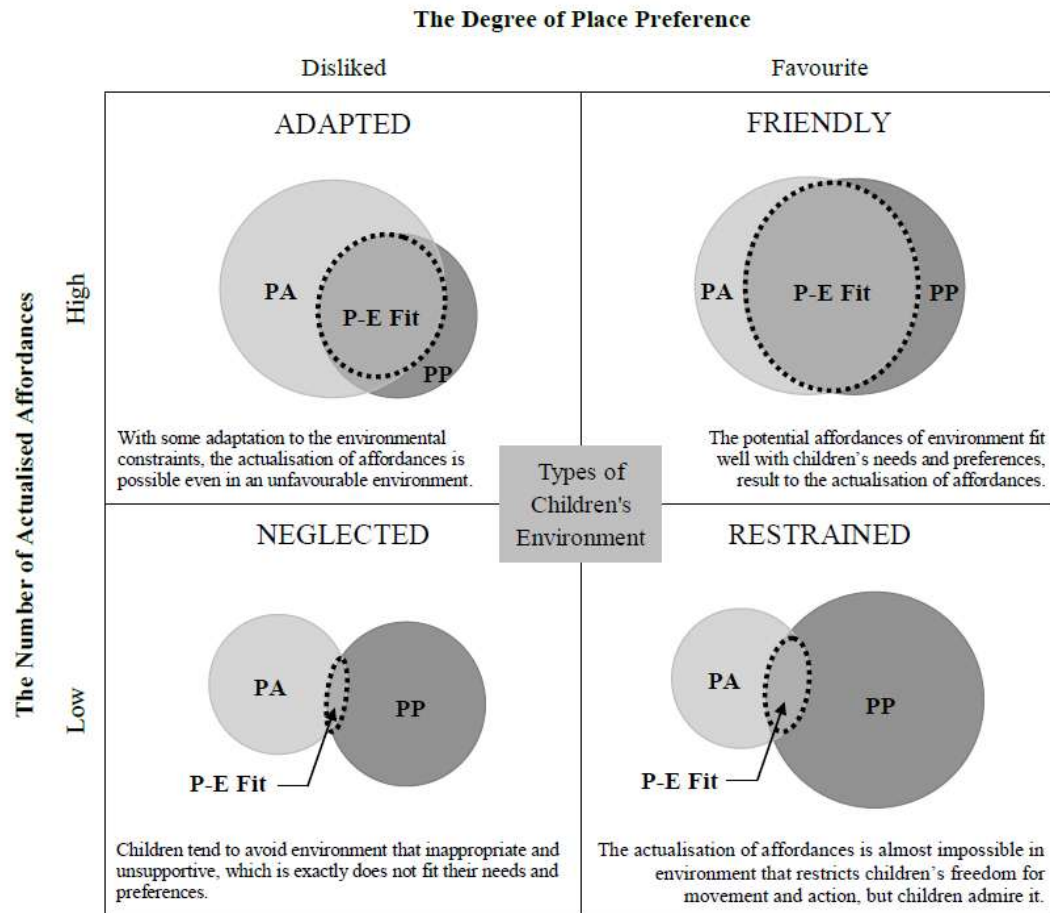
Affection, evaluation, reflection, perception, conception of the environment



Stage 2.

Movement, action, interaction, adaptation, decision making, problem solving, logical and creative thinking

Conclusion & Theoretical Implications



The hypothetical types of children's environment

- ❑ The varying environmental situations of the model are interpreted on the basis of the **degree of P-E fit between the potential affordances of the environment and children's place preferences.**
- ❑ The degree of P-E fit then determined **the number of actualised affordances and children's environmental learning** in the school grounds.
- ❑ **The higher the degree of P-E fit between the environmental affordances and children's preferences, the greater the actualisation of affordances and children's environmental learning.**

Planning and Design Implications

The environmental characteristics of children's environment:

- The research recommends six general aspects of environmental characteristics for the school grounds design: **functionality, attractiveness, aesthetic quality, comfortability, safety and accessibility.**
- It can become a guide to establish and maintain the school grounds environment for optimum use and environmental learning.
- A **friendly school grounds environment is the ideal school grounds** for children's outdoor play and environmental learning which demonstrates a high degree in all aspects of the environmental characteristics.

		TYPES OF CHILDREN'S ENVIRONMENT			
		Friendly	Adapted	Restrained	Neglected
DEGREE OF ENVIRONMENTAL CHARACTERISTICS	High	Functionality Attractiveness Aesthetic quality Comfortability Safety Accessibility	Functionality Attractiveness Accessibility	Attractiveness Aesthetic quality Comfortability	None
	Low	None	Aesthetic quality Comfortability Safety	Functionality Accessibility Safety	Functionality Attractiveness Aesthetic quality Comfortability Safety Accessibility

Contributions of Research

1. The research has expanded our understanding regarding **the transactional relationship between children and their environment**, which informs us about children's behavioural and perceptual responses in meeting their needs, especially in the school grounds environment.
2. The research has identified **different types of children's environment** based on the degree of children's place preference and the number of actualised affordances.
3. The research has identified **the essential environmental characteristics or attributes that influence children's preferences towards the actualisation of affordances and environmental learning** in the school grounds; functionality, attractiveness, aesthetic quality, comfortability, safety, and accessibility. The attributes should be taken into consideration when designing children's environments to ensure the optimum use and actualisation of environmental affordances.
4. The major outcome is **the reconceptualisation of environmental learning through children's outdoor play**, which is shown in the model of the child-environment transaction.
5. It is hoped that all the outcomes gathered from the research will spark an awareness in adults' minds about **the importance of outdoor play for children's performances and environmental learning**. Attention should also be paid **to the importance of recognising and valuing children's perspectives about their environment**. The aim is to create a better understanding of children's needs and preferences leading to the creation of better children's environments in the future.

Recommendations

1. Future research may look at **the affordances of school grounds of national-type schools, SJK(C) and SJK(T)**, which are also known as vernacular schools. Children from different ethnicities may have different perceptions of the affordance of school grounds based on the design and culture of their school grounds.
2. An **experimental study is needed for future research to investigate the relationship between the environmental characteristics and children's environmental learning**. The research can be done through the provision of school grounds environments that considers the six aspects of environmental characteristics. Then, the children's interaction and performance through outdoor play can be observed. The observation can be made before and after the provision (pre and post approach) or can be compared with a school that does not make the provision (control and experiment group).
3. the **provision of school grounds also can be used to observe its impact on children's and teachers' attitudes and behaviours** regarding the use of school grounds for outdoor and environmental learning. Will the provision improve teaching and learning activities? Do the children's knowledge, awareness and attitudes about the environment improve?
4. Future research also can **test the model of children's environments proposed in this research, by considering all aspects of environmental characteristics in determining the level of child-friendliness of an environment**. The model also can be tested to identify the hierarchy of environmental characteristics in designing children's environments.

Publications and Awards

INDEXED JOURNALS

1. Nor Fadzila, A. & Ismail, S. (2012). The Trends and Influential Factors of Children's Use of Outdoor Environments: A Review, *Procedia – Social and Behavioral Sciences*. 38, 205-212.
2. Noor Ain, Y., Nor Fadzila, A. & Ismail, S. (2012). Affordances of Home-School Journey in Rural Environment for Children's Performances. *Procedia – Social and Behavioral Sciences*. 68, 395-405.

CONFERENCES & PROCEEDINGS

1. Nor Fadzila, A., Noor Ain, Y. & Ismail, S. (2013). Mapping Model of School Ground's Affordances: Children Inform the Gaps of the Actual and Ideal Environment for Environmental Learning. *3rd International Conference of Child Friendly Asia Pacific Network*. 27-29 June 2013. Kathmandu Nepal.
2. Nor Fadzila, A., Noor Ain, Y. & Ismail, S. (2013). Developing Maps of Affordances for Children's Environmental Learning at Primary Schools in Malaysia. *UTM-SNU Colloquium*. 5-12 May 2013. Seoul National University, Korea.
3. Nor Fadzila, A. & Ismail, S. (2013). Rethinking the Ideal School Ground Environments for Environmental Learning through Children's Drawings. *5th World Conference on Educational Sciences*. 5-8 February 2013. Rome, Italy. (*in press for Procedia Social and Behavioral Sciences*).
4. Ismail, S., Nor Fadzila, A., Nurul Nadiah, S. & Noor Ain, Y. (2012). Redefining the Meanings of Placeness and Placelessness of Children in Urban Environment. *PlaId 2012*. 26-27 September 2012. Banten, Indonesia.
5. Nor Fadzila, A. & Ismail, S. (2012). Children's Preferences for School Ground Elements: A Pilot Study. *6th South East Asian Technical University Consortium (SEATUC) Symposium*. 6-7 March 2012. Bangkok, Thailand.
6. Nor Fadzila, A. & Ismail, S. (2011). Potentialities and Challenges of Green School Grounds for Children's Outdoor Learning: A Review. *5th South East Asian Technical University Consortium (SEATUC) Symposium*. 24-25 February 2011. Hanoi, Vietnam.

AWARDS

1. Second Place Winner. Three-Minute Thesis Competition (Faculty Level). Faculty of Built Environment, Universiti Teknologi Malaysia. 10 March 2014.
2. Participant. Three-Minute Thesis Competition (University Level). Universiti Teknologi Malaysia. 20 April 2014.



Thank you
for you attention