

# IN THE SEARCH OF GREEN SCHOOL DESIGN IN MALAYSIA: AN OUTDOOR LEARNING EXPERIENCE OF RAINBOW TROOP AND TOTO CHAN

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## Graphical abstract



## Abstract

With current development in the pedagogy of teaching and learning approaches in the world, not many studies have been done on outdoor learning in Malaysia. This paper tries to reconstruct a new framework for elementary school design in Malaysia by introducing a new typology called green school. By referring to the unique approaches of the Rainbow Troops in Indonesia and the story of Toto Chan's outdoor learning space. It will challenge our perception of Malaysian common school design by introducing more open and outdoor oriented learning approaches. The discussion itself will consist of four (4) main parts. First part will discuss on the current problem and situation in teaching and learning in Malaysia, while the second part will try to explore and review on the definition of outdoor learning with its importance and character in learning environment. The third part will focus on the lesson from Green School approaches and philosophy of learning while the last part will do some analysis and on the 3rd year design studio in architecture department of Universiti Putra Malaysia.

**Keywords:** Outdoor learning, green school, rainbow troop, toto chan

## Abstrak

Dengan perkembangan semasa di dalam pedagogi pengajaran dan pembelajaran di dunia, tidak banyak kajian telah dilakukan ke atas pembelajaran luar di Malaysia. Kertas kerja ini cuba untuk membina semula rangka kerja baru bagi reka bentuk sekolah rendah di Malaysia dengan memperkenalkan tipologi baru yang dikenali sebagai sekolah alam. Dengan merujuk kepada pendekatan unik Askar Rainbow di Indonesia dan kisah ruang pembelajaran luar Toto Chan. Ia akan mencabar persepsi kita terhadap reka bentuk sekolah dengan memperkenalkan pendekatan pembelajaran berorientasikan ruang terbuka dan luaran. Perbincangan itu sendiri akan terdiri daripada empat (4) bahagian utama. Bahagian pertama akan membincangkan masalah semasa dan keadaan dalam pengajaran dan pembelajaran di Malaysia, manakala bahagian kedua akan cuba meneroka definisi pengajaran luar dan ciri-ciri dalam persekitaran pembelajaran. Bahagian ketiga akan memberi tumpuan kepada pengajaran daripada pendekatan Sekolah Alam beserta falsafah pembelajarannya manakala bahagian akhir akan melakukan analisis dan pada tahun 3 studio reka bentuk arkitektur jabatan Universiti Putra Malaysia.

**Kata kunci:** Pembelajaran luar, sekolah alam, askar pelangi, toto chan

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## 1.0 INTRODUCTION

As we know, most of the primary school learning system has been used in Malaysia is using the indoor learning system. The system that focusing on memorizing all the information. This type of system has been used almost at all the government and private primary school institution around Malaysia. The most critical learning and teaching problem is the system based on the value (total marks, grade) and the position in the class [1]. It is caused the damage in our education in term of appreciation and the benefit of learning in daily life to position and grade value basis by memorizing, not appreciate, understand, feel and take the benefit of the knowledge [2]. There are curriculum standard for all the primary school institutions provided by the Ministry of Education, Malaysia that should be followed by all the primary school institution all around Malaysia [3]. Most of the primary school institutions in Malaysia using the indoor learning method by showing a video visual, photo visual, picture visual and imagination visual [4].

However, research on certain primary school students in Indonesia shows the increase of interest and understanding up to 40% by using the outdoor learning and teaching methods [5]. An example of sub-theme module; *Nice to Know You Plants* using the audio visual as a method of teaching and learning and its might be less attracting less attracting compare to using the outdoor learning technique with the use of the senses - audio, visual, taste, touch, and smell [6]. With this approaches we can see the different between seeing the torn flowers in the visual shape and the real torn flower, taste with your tongue, touch with your fingers, and smell with your nose which in other words an outdoor learning [7].

## 2.0 OUTDOOR LEARNING DEFINITION

There are many definitions in order to express the meaning of the outdoor learning. The definitions are classified into two (2) categories, 'Psychosocial definitions' and 'Environmental Definitions'. Based on C. A. Lewis, 1975, *The Administration of Outdoor Education Programs*. Dubuque, IA: Kendall-Hunt, the outdoor learning in term of 'Psychosocial definitions' is- *"appeals to the use of the senses - audio, visual, taste, touch, and smell - for observation and perception."* For the other side definition- 'Environmental Definitions', the outdoor learning have been defined as - *"an experiential method of learning by doing, which takes place primarily through exposure to the out-of-doors. In outdoor education, the emphasis for the subject of learning is placed on RELATIONSHIPS: relationships concerning human and natural resources."* Priest, S. (1988). Another definition can be find below: *"an experiential method of learning by doing, which*

*takes place primarily through exposure to the out-of-doors. In outdoor education, the emphasis for the subject of learning is placed on relationship: relationships concerning human and natural resources."* [8, 9, 10].

## 3.0 SOME CASE STUDY OF GREEN SCHOOL IN INDONESIA

Several primary school institutions in Indonesia especially in Jakarta, has been used as early stage research for the outdoor learning method or so called "Sekolah Alam". These institutions has been succeeds of practically the outdoor learning and teaching technique by using five sense and life experience. These successful showing the rapid growing of "Sekolah Alam" in urban and sub urban area and strongly push the wish to extend the research on the outdoor learning. As the space for discussion is very limited, the following short discussion only covers three (3) natural schools in Indonesia which are Ciganjur, Depok and Natur Islam Bekasi.

### 3.1 Sekolah Alam Ciganjur (Ciganjur Green School)

Sekolah Alam Ciganjur (Figure 1) also located in Jakarta and because of the location is in the middle of metropolitan town, the rumors of this school famously spread and become a desire to all parents to send their kids to the best primary school institution.



**Figure 1** Green School of Ciganjur

This green school using 3 concepts in learning and teaching which are Akhlaqul Karimah (teach the child to have an excellent moral with the main method based on Qur'an and Hadith), Knowledge Philosophy (teach the child having a manner logical thinking, respect the nature and surrounding and use it as learning media with the action learning and discussion), Leadership (teach the child to have an excellent leadership spiritual through the 'Out Bound' and 'Dynamic Group'). Figure 2 shows the surrounding of this school.



**Figure 2** Surroundings of Sekolah Alam Ciganjur

### 3.2 Sekolah Alam Depok (Depok Nature's School)

This green school is based on concept of education should be bounded towards the basic purpose of man's creature on earth, as Khalifatullah Fil Ardh (earth's leader) with conditions to understand how to respect the nature creator-Allah SWT, creature and the universe belong to Allah SWT.(sunnatullah)and how to lead others creature/the universe following Allah laws. The above prerequisite was adapted by



three concepts Moral curriculum (effective) which covering: memorize and appreciation of Qur'an and Sunna, honesty, trustworthy, humility, courage, patience, thankful, independent, expression, knowledge lover, emotional stability, forgive and forgiven, sympathy, willing to give and share, able to cooperate, high motivation, discipline, happy, responsible, knowing yourself and ability to interact with nature and surrounding, logical knowledge curriculum (cognitive)-learning process based on thematic in Spider Web, covering the common knowledge, Ad-Din, nature's knowledge, mathematic, creativity and art and leadership curriculum (Psychomotor) which covering: Outward Bound, Life skill, swimming, and business. The curriculum application was supported by three (3) main columns for teaching and learning process basically which are Teacher as a role model, Fun and Active learning.

### 3.3 Sekolah Alam Natur Islam (Natur Islam Nature's School)

All the advantage and education concept in this school's curriculum are more less are same with the other nature's school in Indonesia. That was Islamic and Qur'an intensive learning, learning through the open nature space and the application, freedom of expression and independence. Those concepts were combined into one in the Sekolah Natur Islam education system. All in a single curriculum that combine all aspect of knowledge require by student, and in all subjects teach the Qur'an and Hadith Value was acceptance. However, these green schools still follow the standard by Diknas (Ministry of Education, Indonesia).

### 3.4 Rainbow Troops by Andrea Hirata

Laskar Pelangi (English: The Rainbow Troops) is a 2008 Indonesian popular novel by Andrea Hirata. The novel follows a group of 10 schoolboys and their two inspirational teachers as they struggle with poverty and develop hopes for the future in Gantong Village on the farming and tin mining island of Belitung off the east coast of Sumatra. The novel, set in the 1970s, opens on the first day of the year at a Muhammadiyah elementary school on Belitung. The school needs 10 students but is one short until near the end of the day, when a straggler fills out the ranks for their teachers, Muslimah and Harfan. Muslimah dubs the children "The Rainbow Troops" (sometimes translated as "The Rainbow Warriors") and the novel traces their development and relationships with the teachers. Figure 3 shows rainbow troops by Andrea Hirata



Figure 3 Rainbow troops by Andrea Hirata

### 3.5 Totto-chan, the Little Girl at the Window

Totto-chan, the Little Girl at the Window is a children's book written Tetsuko Kuroyanagi. The book was published originally as *窓ぎわのトットちゃん* (*Madogiwa no Totto-chan*) in 1981, and became an instant bestseller in Japan. The book is about the values of the unconventional education that Kuroyanagi received at Tomoe Gakuen, a Tokyo elementary school founded by educator Sosaku Kobayashi during World War II, and it is considered her childhood memoir. The book begins with Totto-chan's mother coming to know of her daughter's expulsion from public school. Her mother realizes that what Totto-chan needs is a school where more freedom of expression is permitted. Thus, she takes Totto-chan to meet the headmaster of the new school, Mr. Kobayashi. The book goes on to describe the times that Totto-chan has, the friends she makes, the lessons she learns, and the vibrant atmosphere that she imbibes. All of these are presented to the reader through the eyes of a child. Thus the reader sees how the normal world is transformed into a beautiful, exciting place full of joy and enthusiasm. The reader also sees in their role as adults, how Mr. Kobayashi introduces new activities to interest the pupils. One sees in Mr. Kobayashi a man who understands children and strives to develop their qualities of mind, body and heart. His concern for the

physically handicapped and his emphasis on the equality of all children are remarkable. Figure 4 shows the Little Girl at The Window by Toto Chan.

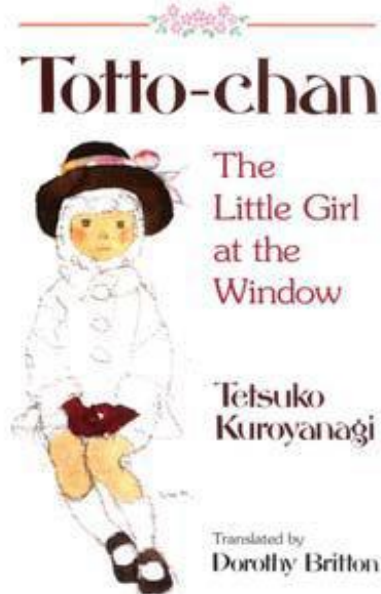


Figure 4 The little girl at the Window by Toto Chan

#### 4.0 OUR EXPERIMENTS IN RECONSTRUCTING GREEN SCHOOL IN MALAYSIA

For the third year studio of architecture students in Faculty of Design and Architecture, University Putra Malaysia on 2013 we are experimenting a studio design of green school as a studio project. The project took site in Taman Tasik Cempaka at Bandar Baru Bangi. This site is chosen due to its socio-economic and environmental condition

Bandar Baru Bangi is newly develop middle class area, it consist of big numbers of housing which become a house of many young couple. This young couple has many small children which perfectly match our target unit for the set up of the green school. Taman Tasik Cempaka itself is a urban park manage under National Landscape Institute, during the weekend it is very active with lots of activity including aerobic class, skate boarding, family gathering point and lots of kids and youth activities. Its site beside the community library which make it a perfect place for both, knowledge and physical activity. As a park the site consists of natural and artificial forest which will be very useful as outdoor learning laboratory for the school.

The studio starts by introducing the Rainbow Troop and Toto Chan book to the students. We help students to visualize the content of the book by showing some movies inspired by this two books.

Students then required coming up with conceptual model which will help them to visualize their idea. Then a green school design is constructed based on the idea that the learning space for the children

should start and focus on the outdoor space rather than internal classroom.

The result of the design is very interesting. As the learning space now is move out from the classroom, students start to think about more physical and in-hand activity like gardening, planting a tree, raising an animal, fishing, story-telling, sport and other outdoor activities which suit very well with the character of the children as the users. The syllabus for the school is the same as normal school (so we are not constructing new syllabus for them) but the teaching and pedagogical methods is different based on the characteristic of green school that more emphasized on the in-hand training with practical side of training.

Due the limitation of the space this papers only discuss two schemes which was proposed by Nuraini and Fatihah. Both of the scheme start with identifying spaces which then customized for the specific needs of the primary school children. Along with input lecture in the studio, characteristic of the spaces and its border then slowly defined. As can be seen in the picture below the focus of the design is not on the normal classroom lay out as we normally seen in the school but on the outdoor space to cater the outdoor activity. Its seem like a landscape design but actually the whole exercise sharpen the students skill in integrating outdoor and indoor spaces especially on the defining of the school's master plan. The design then slowly detailed up until its technical detail. Figure 5 shows sample of design scheme produced.



Figure 5 Sample of design scheme produced

## 5.0 CONCLUSION

Green school is different with the current and formal school generally. The adapted curriculum was prepared by the education staff to match the student ability. Learning and teaching process in Sekolah Alam combining the theory and adaptation. The learning and teaching process in this green school is using the Spider Web method, not per chapter of the text book as usual and by this method the students able to link the education with their real life and able to relate between one subject to another subject they had received. In this school not only student learned something, even teachers learn from the student and parent also learns from teachers and students. The students are not only learning inside the class but they learn everywhere and from anyone. They are not only learning from the books but there are learning from the natures surrounding. This is a stepping stone for a new primary school teaching and learning system and module in Malaysia in order to produce more intellectual, critical, outspoken, independence and expression generation. Our studio exercise has shown a different set of approaches in primary school design, which emphasizes more on the outdoor space rather than indoor. It twists our perspective in designing a school. A green school approaches is currently an alternative approaches but with the changes of the mindset and understanding it can and it will be a mainstream approaches in Malaysian education

system as currently happen in Indonesia and some other Asian countries.

## References

- [1] Andrea Hirata. 2013. *The Rainbow Troops*. New York: Sarah Crichton Books.
- [2] C. A. Lewis. 1975. *The Administration of Outdoor Education Programs*. Dubuque, IA: Kendall-Hunt.
- [3] Haas, Malka. v72, n6, 1996. Children In The Junkyard. Childhood Education, Association for Childhood Education International, Wheaton, MD.
- [4] Komunitas Sekolah Alam. 2005. Menemukan Sekolah yang Membebaskan-Perjalanan Menggapai Sekolah yang Mendidik Anak Menjadi Manusia Berkarakter.
- [5] Moore, Robin. Vol. VIII, 1996. Compact Nature: The Role of Playing and Learning Gardens on Children's Lives. *Journal of Therapeutic Horticulture*.
- [6] Moore, Robin C. & Herb H. Hong. 1997. *Natural Learning: Creating Environments for Rediscovering Nature's Way of Teaching*. Berkeley, California, MIG Communications.
- [7] Priest, S. 1988. The Ladder of Environmental Learning. *Journal of Adventure Education*. 5(2): 23-25.
- [8] Trianto, M. Pd. 2010. *Model Pembelajaran Terpadu-Konsep, Strategi, dan Implimentasinya dalam Kurikulum Tingkat Satuan Pendidikan, (KTSP)*. Kuala Lumpur: Kementerian Pengajaran Malaysia.
- [9] Tetsuko Kuroyanagi. 1981. *The Little Girl at The Window*. Jakarta : Gramedia Press.
- [10] Soleimanzadeh, S., M.A. Othuman Mydin, 2013. Influence of High Temperatures on Flexural Strength of Foamed Concrete Containing Fly Ash and Polypropylene Fiber, *International Journal of Engineering*, 26 (1): 365-374