UNIVERSITI PUTRA MALAYSIA

TEACHERS’ AND CARETAKERS’ PERCEPTIONS ON GREEN OUTDOOR ENVIRONMENT FOR CHILDREN WITH LEARNING DISABILITIES AT A PRIMARY SCHOOL IN SELANGOR, MALAYSIA.

NOOR AZRAMALINA BINTI ABDUL AZIZ

FRSB 2017 9
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By

NOOR AZRAMALINA BINTI ABDUL AZIZ

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

February 2017
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DEDICATION

This thesis is dedicated to my parents, Abdul Aziz and Rahmah, to my sibling and my friends, Nur Syakira Amira and Fathirah. Thank you for all your support. The preparation of the thesis, with the decision to study on the special children, had made me appreciate and cherish what I have and to be grateful with what Allah had bestowed upon me.

“We need to help the children with learning disabilities to be a balancing person, independent and successful in their life.”

(Malaysian Ministry of Education, 2002)
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Master of Science

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By

NOOR AZRAMALINA BINTI ABDUL AZIZ

February 2017

Chairman: Shureen Faris Abd. Shukor, PhD
Faculty: Design and Architecture

In early childhood education, extensive research has shown that young children have unique learning styles and experience in physical, emotional, social, language and cognitive will change in a predictable way that match on their stages which occur in an orderly sequence during their lives. Numerous studies has shown that the children with disabilities have a slow development in learning process. The importance of stimulating environment for children with disabilities has since been confirmed. There is a lack of research supporting evidence-based design concerning green outdoor learning environment at special education for children with learning disabilities in a Malaysian context from the past studies done. The purpose of this thesis is to identify suitable design of green outdoor environment (GOEs) that could contribute to the learning process of children with learning disabilities and at the same time support the curriculum for special education at primary schools in Malaysia. This study focuses on the type of outdoor learning environment preferred among the teachers, caretakers and special students involved in the special education at a primary school in Malaysia. Three research objectives were developed which are 1) to identify the type of outdoor learning environments preferred among the teachers, caretakers and special students, 2) to analyze the preferences and 3) to provide implications for the design of GOEs for children with learning disabilities in special education at primary school. A primary school in Serdang which has a Special Education Integrated Program was selected as a case study. This study involved a sample of primary school children at special education class (7 to 14 years old) who attended the school from 7:30 to 1:00pm for 5 days a week. The children followed the standard curriculum when they were in school. This study applied a mix method which is the quantitative (questionnaire) and the qualitative (interview and behavioural observation) methods to collect the data. A survey form for behavioural observation was used to survey the children in order to identify their preferred activities for outdoor and indoor classroom. The teachers and caretakers were interviewed and also given questionnaires to identify the activities and the landscape design characteristics that their students preferred when being outdoor and indoor. Results from the findings have shown that children with learning
disabilities preferred to be in the outdoor environment rather than in an indoor classroom. The GOEs should offer facilities that could encourage a sense of security, space for interaction and easy supervision. It should also heighten their sensory awareness and experience. The findings presented 4 divisions of the implication for GOEs which are a) the outdoor should be an attractive place, b) provide safety aspects, c) increase interaction and d) provide a transition space. Furthermore, the results have shown that GOEs have potentials to be part of therapy programmes for children with learning disabilities at primary schools in Malaysia.

Keywords: outdoor therapy programme, special education, stimulating environment
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

PERSEPSI GURU DAN PENJAGA TERHADAP PERSEKITARAN LUAR HIJAU UNTUK KANAK- KANAK BERMASALAH PEMBELAJARAN DI SEKOLAH KEBANGSAAN DI SELANGOR, MALAYSIA.

Oleh

NOOR AZRAMALINA BINTI ABDUL AZIZ

Febuari 2017

Pengerusi: Shureen Faris Abd. Shukor, PhD
Fakulti: Rekabentuk dan Senibina

Dalam pendidikan awal kanak-kanak, penyelidikan meluas telah menunjukkan bahawa kanak-kanak mempunyai pembangunan gaya pembelajaran yang unik dan pengalaman dalam fizikal, emosi, sosial, bahasa dan kognitif akan berubah dalam cara yang boleh diramal yang sesuai di peringkat mereka yang berlaku dalam urutan teratur sepanjang kehidupan mereka. Beberapa kajian menunjukkan bahawa kanak-kanak kurang upaya mempunyai pembangunan yang perlahan dalam proses pembelajaran. Kepentingan persekitaran yang merangsang untuk kanak-kanak kurang upaya sejak itu telah disahkan. Terdapat kekurangan penyelidikan yang menyokong reka bentuk berasaskan bukti mengenai persekitaran pembelajaran luar hijau di pendidikan khas untuk kanak-kanak yang mempunyai masalah pembelajaran dalam konteks Malaysia daripada kajian lepas yang dilakukan. Tujuan kajian ini adalah untuk mengenal pasti rekabentuk persekitaran luar hijau (GOEs) yang sesuai bagi menyumbang dalam proses pembelajaran untuk kanak-kanak dengan bermasalah pembelajaran dan pada masa yang sama menyokong kurikulum pendidikan khas di sekolah rendah di Malaysia. Kajian ini memberi tumpuan kepada jenis pilihan persekitaran pembelajaran luar di kalangan guru, penjaga dan pelajar khas yang terlibat dalam pendidikan khas di sekolah rendah di Malaysia. Tiga objektif kajian telah dibangunkan iaitu 1) untuk mengenal pasti jenis pilihan persekitaran pembelajaran luar di kalangan guru, penjaga dan pelajar khas; 2) untuk menganalisis keutamaan dan 3) untuk memberikan implikasi bagi rekabentuk GOEs untuk kanak-kanak yang mempunyai masalah pembelajaran dalam pendidikan khas di sekolah rendah. Sebuah sekolah rendah di Serdang yang mempunyai Program Integrasi Pendidikan Khas telah dipilih sebagai kajian kes. Kajian ini akan melibatkan sampel pelajar sekolah rendah di kelas pendidikan khas (7 hingga 14 tahun) yang menghadiri sekolah dari pukul 7:30 pagi - 1:00 petang selama 5 hari seminggu. Kanak-kanak akan mengikuti kurikulum standard apabila mereka berada di sekolah. Kajian ini menggunakan kaedah campuran iaitu kuantitatif (soal selidik) dan kualitatif (temu bual dan pemerhatian tingkah laku) kaedah untuk mengumpul data. Borang kajian dalam pemerhatian tingkah laku digunakan untuk meninjau kanak-kanak bagi mengenal pasti aktiviti pilihan mereka untuk luar dan dalam kelas. Guru dan pembantu pengajar telah ditemubual dan juga diberi borang
soal selidik untuk mengenal pasti aktiviti dan watak rekabentuk landskap yang menjadi pilihan pelajar mereka apabila berada di luar dan di dalam. Hasil kajian telah menunjukkan bahawa kanak-kanak yang mempunyai masalah pembelajaran adalah lebih suka berada di persekitaran luar daripada berada di dalam kelas. Persekitaran luaran hijau (GOEs) harus menawarkan kemudahan yang boleh menggalakkan rasa selamat, ruang untuk berinteraksi dan pengawasan mudah. Ia juga perlu meningkatkan kesedaran deria dan pengalaman mereka. Penemuan kajian telah membentangkan 4 pembahagian implikasi untuk GOEs iaitu a) persekitaran luar yang perlu menjadi tempat yang menarik, b) menyediakan aspek keselamatan, c) meningkatkan interaksi dan d) menyediakan ruang peralihan. Tambahan pula, hasil kajian telah menunjukkan GOEs mempunyai potensi untuk menjadi sebahagian daripada program terapi untuk kanak-kanak yang mempunyai masalah pembelajaran di sekolah rendah di Malaysia.

Kata kunci: pendidikan khas, persekitaran hijau, program terapi luar
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I certify that a Thesis Examination Committee has met on 24 February 2017 to conduct the final examination of Noor Azramalina binti Abdul Aziz on her thesis entitled "Teachers’ and Caretakers’ Perceptions on Green Outdoor Environments for Children with Learning Disabilities at a Primary School in Selangor, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

There is a need for an outdoor learning environment that supports the standard curriculum system for special education in primary schools in Malaysia. When designing for special children, we are faced with the challenge of how to create an environment that also includes equipment and furniture, which produces desired behavior and outcomes and at the same time supports the existing curriculum. Many researchers such as Noonan and McCormick (1993), Said et al. (2002), White (2005) and many more had shown that by being in outdoor environments such as a garden setting, either in passive or active mode can arouse the senses that nurture the children’s inductive and deductive reasoning, motor impulse development and reflective thinking capabilities.

Increased use of children’s outdoor environment for teaching and learning reflects an increasing number of benefits to children fortunate enough to be involved in this type of learning. Classrooms are well suited to auditory and even visual learners, but those who are dominantly kinesthetic learners need more experiential environment that is easily found in the outdoors (Tai et al., 2006, pg. 269). The dominant reasons as to why environment-based education is not embraced, as described by teachers themselves, fall into eight categories (Tai et al., 2006, pg. 272-276). The categories as mentioned by the said authors are; lack of understanding, lack of environmental experiences, outdoor fears, time, and inflexibility of schedules, training, pricey factor and breaking the routine. Researches are needed in highlighting the importance of utilizing the green outdoor environment in teaching children to support special education in primary schools.

1.2 The Problem Statement

The benefits of gardens have been revealed by studies conducted over the past three decades (Marcus, 1995; Ulrich, 1991; Kaplan and Kaplan, 1989). However, further study was required to determine how to design appropriate garden spaces that could benefit special children. The children with disabilities also like to be treated like normal students. They do not just want good education, they also want to feel welcomed by schools and not treated differently, which includes all aspects of school life, such as providing supports to learn and making friendships (UNICEF Malaysia, 2014). Children with disabilities also wanted the same opportunities as normal students to achieve qualifications and skills that will lead to job and training
opportunities, which can further help them to gain confidence and control over their own lives (ibid).

In 2012, the total number of persons with disabilities registered in Malaysia were 445,006 that representing 1.5 per cent of the country’s population of approximately 29.3 million (UNICEF Malaysia, 2014). In Malaysia, among 29, 289 number of children with disabilities, 19, 150 were diagnosed with learning disabilities (ibid). According to Tyson (1998) and Morris (2003), there were inadequate researches concerning people with disabilities. As the benefits of GOEs had been proven by many researches, it is high time that community of people with disabilities in Malaysia benefits from the exposure to this type of spaces. Therefore, the under-utilized green spaces for learning process at school especially for children with learning disabilities need to be studied further.

There is a lack of research supporting evidence-based design concerning green outdoor learning environment at special education for children with learning disabilities in a Malaysian context. Moreover, this study could pave the way for other researches dealing with the GOEs related to other disability types in Malaysia. The knowledge gained from this study may improve future facility-user relationships as well as provide the necessary empirical data to convince Ministry of Education and non-government organizations (NGOs) the value of GOEs in school facilities and therapy centers.

Table 1.1: The past studies done in other countries compared to Malaysia.

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1.3 Research Question

The research question which has been identified as significant for this study is:
- What type of outdoor learning environment preferred among the teachers, caretakers and special students involved in the special education at primary school in Malaysia?

1.4 Research Goal

The goal of this study is to propose implication of design for GOEs that could contribute to the learning process of children with learning disabilities and at the same time support the curriculum for special education at primary schools in Malaysia.

1.5 Research Objectives

The following objectives were established towards achieving the goal of this study.
1) To identify the type of outdoor learning environment preferred among the teachers, caretakers and special students involved in the special education at primary schools in Malaysia.
2) To analyze the preferences of the teachers, caretakers and special students regarding the GOEs.
3) To provide implications for design of GOEs for children with learning disabilities.

1.6 Research Significance

This study has been stimulated by the lack of research concerning outdoor environment for the people with disabilities. Currently, studies has been carried out to identify the design characteristics of a green outdoor environment for children with disabilities.
such as Down Syndrome (Faris, 2007) and Visual Impairment/Blindness (Li Peng, Faris and Mustafa, 2014) in Malaysia but not focusing on schools that cater for special children with learning disabilities.

Prior references and projects can be cited where physical environment was credited for reducing stress levels, shortening recovery periods, decreasing hospital stays, containing and reducing psychopathology, decreasing pain medication dosages and improving staff attitudes and quality of care (Coryell, 2003; Ulrich, 1991). These studies included those who were hospitalized, disabled or chronic illness such as Alzheimer, AIDS, cancer and Attention Deficit Hyperactive Disorder (ADHD).

This study is the first attempt to focus on learning process of children with learning disabilities in primary schools. This study also investigated the design criteria of green outdoor learning environments for children in the special education at a selected primary school in Malaysia. The knowledge gained from this study may improve future facility-user relationships as well as provide the necessary empirical data to convince Ministry of Education and non-government organizations (NGOs) the value of landscape design in school facilities and therapy centers.

The Malaysian Ministry of Education in 2002 noted that,

“We provide education of the best quality for children with learning disabilities that focus more on the mastery of skills for individual's needs, not overemphasizing on academic and definitely not a burden.”

The significant of this study is that it will provide the references in designing the green outdoor environment to support the curriculum for special education in primary schools in Malaysia.

1.7 Assumptions and Limitations of the Study

1.7.1 Assumptions

The teacher’s and caretaker’s role of children with learning disabilities were regarded much more akin to that of a parent because they spend half of the days with the students during weekdays. They understand students’ behaviour and needs within the outdoor settings of primary school. Therefore, the possible preferences for green outdoor learning environment had been listed for the teachers and caretakers to choose and rate. This study assumed that the characteristics chosen by the teachers and caretakers could be part the process to improve the GOEs.
1.7.2 Limitations

The literature had to rely on studies of previous researchers who worked on patients like Down’s syndrome, visual disabilities and others that have some similarities disabilities with children with learning disabilities. Therefore, this study focuses on learning process of children with learning disabilities in primary schools that has not been carried out before. Only one primary school was selected for this first study, which is Sekolah Kebangsaan Serdang which has a Special Education Integrated Program. This primary school had followed the standard curriculum in special education which included the indoor and outdoor learning areas. The location of this school is near to Universiti Putra Malaysia, which is 1.1 kilometer. This school also has close collaboration with Universiti Putra Malaysia where this study was based.

1.8 Definition of Terminologies

For clarification, the followings are the operational definitions for this study.

**Children with learning disability:** This term refers to the children who have disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may have difficulties of ability to listen, think, speak, read, write, spell, or to do mathematical calculations (National Dissemination Center for Children with Disabilities, 2011) such as autism, down syndrome and slow learner children. For the purpose of this study, children with learning disability will refer to children in special education classes (7 to 14 years old). The children were attending Sekolah Kebangsaan Serdang and stayed at the school from 7:30 to 1:00pm, 5 days a week.

**Green Outdoor environment (GOE):** Defined as the exterior of schools such as gardens, courtyards and outdoor learning places. Designed with soft and hard landscape features that can be used and enjoyed (Faris, 2013) by students, teachers and staff at schools.

**Landscape Design:** It is the art of arranging or modifying the features and process of designing and creating plan for layout and planting of gardens and landscapes for aesthetic or practical reasons (Beaulieu, 2015). Landscape designs consist of various types of ability to restore health such as restorative garden for school.

**Outdoor education:** Outdoor education refers to organized learning that takes place in the outdoors. Outdoor education is an experiential method of learning with the use of all senses. It takes place primarily, but not exclusively, through exposure to the natural environment. In outdoor education, the emphasis for
the subject of learning is placed on relationships concerning people and natural resources (Lund, 2002).

Outdoor Learning: Outdoor Learning is a broad term that includes: outdoor play in the early years, school grounds projects, environmental education, recreational and adventure activities, personal and social development programs, expeditions, team building, leadership training, management development, education for sustainability, adventure therapy and more. Outdoor play also enables children to enjoy the natural environment and learn to seek out exercise, fresh air, and activity. There is something fundamentally healthy about using the outdoors. Thus outdoor play develops disposition for the outdoors, physical activity, and care of the environment (The Institute for Outdoor Learning in England, 2005).

Preferences: Defined as a like something or an advantage that is given from choose it because like or want it more than the other thing.

Restoration: This refers to the process of recovery from stress that involves numerous positive changes in psychological state, in levels of activity in physiological systems and often behaviors or functioning (Ulrich et.al, 1991).

Special education: Malaysian education (Special Education) Regulations 2013 stated that a pupil with special education needs means a pupil who is certified by a medical practitioner, an optometrist, an audiologist or a psychologist to have visual disability, hearing disability, speech disability, physical disability, learning difficulties or any combination of the disabilities or difficulties listed above.

Teachers & caretakers of special learning: The teachers are those assigned to teach at Sekolah Kebangsaan Serdang and the caretakers are the assistants. Teachers and caretakers also as the parents of the students at the same time in school because they spend half of the days with the students during weekdays and understand students’ behaviour and needs.

1.9 Conclusion

This chapter provides the overall scenario of the conducted study. It can be said that there is a lack of research supporting evidence-based design concerning GOEs at special education for children with learning disabilities in Malaysia. The next chapter will elaborate on the benefits of having GOEs for the development of children with disabilities.
REFERENCES


Ministry of education Malaysia (2002). Primary School Standard Curriculum Special Education. (Handbook of Educational Plan Individual Special needs, 2000).


White, R. (2004). Adult are from Earth; Children are from the moon, Designing for children: A Complex Challenge.

