

B 21

INTER-UNIVERSITY
SEMINAR ON
ASIAN MEGACITIES

ASIAN URBANISM AND BEYOND

15-17 August 2013

Organised by Urban Studies Programme,
Department of Geography and Resource Management &
Faculty of Social Science



50
Embrace our Culture
Empower our Future
香港中文大學五十年
50th Anniversary of CUHK

傳承 · 開創

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- Department of Geography and Resource Management, The Chinese University of Hong Kong
- Faculty of Social Science, The Chinese University of Hong Kong

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- Institute of Future Cities, The Chinese University of Hong Kong
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	Prof. Santos, Romeo, University of the Philippines
	Prof. Apananont, Nopant, Chulalongkorn University
	Prof. Yan, Wanglin, Keio University



16 August 2013 (Friday)

Theme 4: Housing, Architecture and Culture
Session 4: Architecture, Conservation and Urban Design (I)
Venue: Rm 408, Yasumoto International Academic Park

Zhogolev, Yuri and *Luchkova, Vera I., Pacific National University: GIS passport.
Building lifecycle management (BLM)

Ino, Azusa, Keio University: A townscape change simulation and its application to design – to maintain greenery space in suburban residential area

Isaev, Pavel and Luchkova, Vera I., Pacific National University: Concept of historical integration architecture of ancient and modern world. From the point of view of the resource saving space

Setyawan, Siti Luzviminda H.P. and Dwingrum, Siti Irene Astuti, Bandung Institute of Technology and Yogyakarta State University: Designing therapeutic landscape as an effort to reduce stress especially in school environment responding to global warming effect

Theme 5: Qualitative and Quantitative Aspects
Session 4: Space, Power and Identity (I)
Venue: Rm 409, Yasumoto International Academic Park

***Tieben, Hendrik and Ahl, Bjorn**, The Chinese University of Hong Kong and University of Cologne, Germany: Modern Chinese court buildings, regime legitimacy and the public

Liu, Samson Zhuojun and Tang, Bo-sin, The University of Hong Kong: Transforming to Urbanity? Shareholding Reforms of Village Collectives in Guangzhou

Vallarta, Bianca B., University of the Philippines: The Binondo streetscape: culture or clutter? Urban clutter as a manifestation of culture

Litvinenko, Nikolay and Luchkova, Vera I., Pacific National University: Theories (Systems) of modules and proportions in architecture and urban planning

11:00am – 11:15am Coffee Break



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Hari : Selasa s.d. Senin
Tanggal : 13 s.d. 19 Agustus 2013
(Seminar : Kamis s.d. Sabtu, 15 s.d. 17 Agustus 2013)
(Kunjungan : Rabu dan Minggu, 14 dan 18 Agustus 2013)

Tempat : Chinese University of Hongkong

Kegiatan : Sebagai pemakalah pendamping dalam kegiatan *Inter-University Seminar on Asian Megacities: Asian Urbanism and Beyond* dan kunjungan pada Fakultas Pendidikan Hongkong University

Surat tugas ini diberikan untuk dipergunakan dan dilaksanakan sebagaimana mestinya, dan setelah selesai agar melaporkan hasilnya kepada Direktur.

Kepada yang berkepentingan harap maklum, atas perhatian dan kerjasama yang baik diucapkan terimakasih.

Yogyakarta, 13 Agustus 2013



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Designing Therapeutic Landscape as an Effort to Reduce Stress Especially in School Environment Responding to Global Warming Effect

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Abstract

There are several effects caused by the happening of global warming, in which one of the micro effect is the unbalance of the ecosystem, that generally causing several changes in people behavior, such as anarchy behavior, deviant behavior, and stress. In respond to the effect, which is happened because of the changes in the environment, there should be an improvement in the environment itself. The purpose of the improvement is not only to rebalance the ecosystem, but also as an effort to environmental preservation. One effort to do the improvement is by redesigning the landscape as the part of the environment. School is one kind of environment in need of stress reduction effort, as children nowadays, because of the changes in their environment, are easier to have behavioral changes. The approach of the research is to counteract the changes of behavior with landscape design as part of therapeutic environment, which could support in reducing stress, improving enthusiasm for learning, and creating a better environment for teaching-learning activities. The effort of reducing stress is also necessary to be conducted in the global context. It should be implemented in the areas that have a high influence of global warming which could be conducted in few districts related.

Keywords: global warming, school environment, behavioral changes, reducing stress, therapeutic landscape

Introduction

Human life is highly dependent on the quality of the environment while the well-being of human life is determined by its environment support. However, environmental issues continue to occur and it has started to become a global problem.

Environmental issues are not easily addressed personally, but desperately needs the cooperation and commitment of the citizens of the community. It continues to occur in the vicinity of human life that requires awareness, activity integrated in the management of the environment, and population.

Human life cannot be separated from their surroundings, both the natural environment and the social environment. We need breathing air from the surrounding environment. We eat, drink, and our health, all of which require environment. Understanding the environment as everything that exists around humans which influenced the development of human life either directly or indirectly, according to the environmentalists, can be distinguished as biotic and abiotic. If we are in school, the biotic environment areschool friends, teachers,the employees, and all those who are stay in the school, as well as various types of plants which planted in the school and the animals in the surrounding areas. As for the abiotic environment components could be defined as air, desk chairs, blackboard, school buildings, and a variety of inanimate objects around.

The environment that consists of a fellow human being is referred as the social environment which constitutes the system in shaping one's personality. Specifically, people use the term environment to mention everything that affect the survival of all creatures in earth. Based on UU No. 23 of 1997, environment is the united spaces with all the objects of living beings including humans and behavior that accommodate humanity and human welfare as well as other living beings.

Human behavior has changed the environment. Environmental issues keep happening around us which either deliberately or accidentally caused by human actions. The following are a few examples of environmental damages as the result from a natural process settlement, such as building damaged by rain, earthquake, or tsunami. On the other hand, example of environmental damage that resulting from human activity isthe changed micro climate, the reduced regional water absorption area caused by urban development, and the environment pollution that happened when there is a human environment pollutant in great quantity produced by human activities.

Global warming is happened due to human behavior. Following are the signs of the happening of global warming¹:

- According to the available data, global warming has increased the intensity of precipitation events over recent decades.
- From 1998 to 2002, below-normal precipitation and high temperatures resulted in droughts covering wide swaths of North America, southern Europe, and southern and central Asia.

¹www.edf.org/content/global-warmings-increasingly-visible-impacts (June 2013)

- Drought, heat, and insect attacks promote severe forest fires. All told, over the past 30 years, the area burned annually by wildfires in the Arctic region of western North America has doubled.
- Sea-level rise is one of the most certain impacts of global warming.
- During the 20th century, sea levels around the world raised by an average of 4 to 8 inches (10 to 20 cm), ten times the average rate over the last 3,000 years. That rise is projected to continue or accelerate further, with possible catastrophic increases of many meters if the ice sheets on Greenland and/or Antarctica collapse.
- Over the past 50 years, spring snowpack has diminished by 16% in the Rocky Mountains and 29% in the Cascade Range, due mainly to rising temperatures.
- In almost every mountainous region across the world, glaciers are retreating in response to the warming climate.
- The shrinkage of glaciers is already creating water shortages, and threatening tourism in scenic parks. In one basin in Glacier National Park in Montana, for instance, two-thirds of the ice has disappeared since 1850; with uncontrolled warming, the remaining glaciers could disappear by 2030.

The effect of global warming that affected the most of people's life is the occurrence of climate change. Climate change is described as a broader term that refers to a long term changes in climate, including average temperature and precipitation. The phenomenon of climate change has affected the dynamics of human life. Human behavior is changed in all its activities, for example in family, school, employment, hospitals etc. It is changed due to the change of elements that formed the human living environment, such as the change in the biotic environment, environmental abiotic constraints, and socio-cultural environment as the after effects of global warming. The efforts to create an environment that gives positive effects to human life must be creative and innovative which systemically designed, resulting in more optimal results in changing human behavior that tends to turn into stress.

Discussion

A. Stress and Behavior Changes

Human behavior changes as a result of climate anomalies which tend to caused stress. Children and teens notice and react to stress in their family and also experience their own stress. Generally, anything that may cause children fear and anxiety can cause stress. The following are some common signs of stress in different age groups (Table 1). The phenomenon of stress continues to increase due to changes in the ecosystem. The elements in the environment tend to no longer interact optimally, even

the interruptions in the process of interactions between elements of the environment are increasingly critical, no wonder there are areas that are no longer able to give strong environmental support resources for the needs of human life. As a result, the quality of the environment is declining, and the welfare of human life is getting low.

Table 1. Signs of Stress in Children and Teens

PRESCHOOL & TODDLERS	ELEMENTARY-AGE	PRETEENS & TEENS
<ul style="list-style-type: none"> • anger • anxiety • eating and sleeping problems, including nightmares • fear of being alone • irritability • regressing to infant behaviors • trembling with fright • uncontrollable crying • withdrawal 	<ul style="list-style-type: none"> • being distrustful • complaining of headaches or stomach aches • feeling unloved • having no appetite • having trouble sleeping • needing to urinate frequently • not caring about school or friendship • acting withdrawn • worrying about the future 	<ul style="list-style-type: none"> • anger • disillusionment • distrust of the world • low self-esteem • stomach aches and headaches • rebellion

Source: <http://www.healthlinkbc.ca/kb/content/special/ug1832.html> (June, 2013)

School environment is one environment in the need of rearrangement, so that the learning process can be run more optimally. The school environment should be maintained in order to provide a positive climate effect in shaping the behavior of students. If the school environment is not conducive, the students will have difficulty in learning, which resulting in the failure in building a culture of learning. There are few innovations regarding to learning environments for student in school, with a few changes in class environment design, based on research, could result in more positive student attitudes and greater participation in class (Gump, 1984; Rivlin and Wolfe, 1985; Sommer and Olsen, 1980).

Currently, problems at school keep going as it does: students learning, students are not lazy achievers, students quickly saturated, students easily conflict and a brawl, students are not creative. The phenomenon occurs because the climate of the school physically and socially no longer felt conducive to learn. Designing a school environment that is fun for the students to learn is a necessary.

B. Creating a Suitable Learning Environment

Creating a suitable learning environment allows you to maximize you learning efficiency. It serves as a catalyst for productive effort. As much as possible, you

should designate a special place to study. This place should be uncluttered and should provide few distractions to allow for maximum concentration². One way to create a suitable learning environment is by creating a soothing environment. Creating a soothing environment can reduce stress and help to learn. Aromatherapy, for example, is a known stress reliever. Playing classical music can also be soothing and help to learn, unless it was distracting. Following is more on finding a suitable learning space³.

The first step towards effective studying is to create a learning environment that fosters productivity. An ideal learning environment varies from person to person, but considering these five factors will help you to create your suitable learning environment⁴:

- Location
By choosing an appropriate location to work that would be the most comfortable location for studying.
- Atmosphere
There are few types of studying atmosphere that could be different from one person to another. Following are factors to consider choosing an atmosphere to study:
 - Noise – some students prefer complete quiet, while others like soft background music or ambient noise.
 - Lighting – harsh bright light is often unpleasant, while soft, ambient light can put you to sleep.
 - Temperature – to find a place with a fairly consistent temperature.
- Private vs. Group Studying
If students prefer to study with a group of people, some factors that will need to be considered are location, planning, time of day, and the assignment. Just make sure that they are not distracting each other and that they are effectively working together to complete the assignment with minimal distractions.
- Distractions
Students may need to deal with some distractions to create an environment that allows them to be focused and productive:
 - reduce noise distractions,

²<http://www.ctl.ua.edu/ctlstudyguides/studyskillsflyers/generaltips/creatingstudyenvironment.htm>(June, 2013)

³<http://stress.about.com/od/studentstress/ht/schoolstress.htm>(June, 2013)

⁴<http://www.wcu.edu/academics/campus-academic-resources/writing-and-learning-commons-walc/course-tutoring-and-academic-skills/academic-strategies/ideal-study-environments-and-factors-that-influence-studying.asp>(June, 2013)

- keep the study environment uncluttered,
- once a student found a study environment that works well, use it regularly.

C. The Design Development Concept

Establish a quality environment of human life at the school was not easy, because it determined the ability to meet human needs. In general, Otto Soemarwoto (1989) regulate the quality of human life as something that satisfy the biological needs of living things such as water and air, satisfy the needs of human life such as housing, clothing, education, and health and satisfy the freedom which is restricted by both the written law by government and social norm. In the context of the school environment to meet environmental quality is determined by the adequacy of supporting elements of the environment to meet the needs of the school.

Social environmental design is basically planned to rebuild the dynamics of environmental elements to engineer more balanced in the environment as long with the existence of elements of biodiversity that consists of living beings, like humans, animals, plants, and microorganism. If we are in the schools, then the living environment is dominated by plants, while in the classroom, the living environment is predominantly by friends or fellow student. The case of socio-cultural elements, named the social and cultural environment, which made human as a system of values, ideas, and beliefs in behavior as social beings. People's lives can be achieved thanks to the regularity of any system of values and norms that are recognized and adhered by all members of the community. While the elements of the physical (abiotic component), as the elements of the environment which consisting of the inanimate objects, such as land, water, air, climate, etc. The existence of the physical environment is a huge role for the survival of living being on Earth.

The concept developed in the design of therapeutic environment at school includes variety of environmental factors, such as:

- Type and quantity of each type of environmental elements, for example is the number of elements of the plant,
- Interaction between the elements in the environment,
- Behavior or condition of the environment, for example, environment of a city which has active and hardworking inhabitants is different with similar city but with relaxed and lazy inhabitants. The other example, an environment of a region with gentle slope and fertile land is a different from a region with erosion and steep slope,
- Non-material temperature, light and noise, for example, an environment with heat, glare and noise is very different with the cool air, enough light, without glare and quiet environments.

Humans interact with the environment. They are affected and influenced by their environment.

The basic concept that was developed from therapeutic environmental design is to create an environment with a focus on improving the conditions of environmental factors, which are able to provide a positive effect for the improvement of environmental quality. With the improvement of the quality of the school environment, it is expected to reduce stress in students learning in the school.

D. Definition of Therapeutic Landscape

According to Roger S. Ulrich, a healing garden refers to the various features of the parks that have in common to encourage recovery from stress. In addition, Eckerling (1996) also has a definition that is not much different. A healing garden is a garden that was designed with the goal to make its users feel better. Following is the design criteria that analyzed from Landscape Architectural Graphic Standards (2007).

Restorative Garden

Restorative garden is a garden that helps reduce stress and balance emotion with cognitive. It includes four phases of the therapeutic process as following (Table 2):

1. The Journey

- Invite visual and physical exploration with various materials and vegetation,
- Emphasize transitions with hidden vistas which is making transitions with different views,
- Provide changing orientations with orientation to vegetation area and orientation to the water pond,
- Create thresholds of different microclimates with various spots; windy area, cool area, sunlight exposed area, shady area, grass area, etc.,
- Use combination of light and shadow with providing both vegetation with high and low density canopy and providing shady seating area,
- Providing chances for individual to shift from a painful or unproductive perspective with experiencing natural environment.

2. Sensory Awakening

- Supply a variety of noninvasive sensory stimuli and opportunities to stop and enjoy the sensations; providing visual stimuli with vegetation in various shapes, types, and colors; providing hearing stimuli with moving water sensation; providing smell stimuli with aromatherapy; and providing tactile stimuli with various textures of vegetation and materials.
- Call particular attention to fragrances and wind with choosing particular vegetation to stimulate smell sense as part of aromatherapy.

- Bring awareness into the moment with choosing particular vegetation that changing through every season.

3. *Self Awareness*

- Apply the concepts of prospect refuge, auditory screening, and other protective measure to create physically and psychologically safe area for reflection and cathartic release that could be conducted by choosing particular vegetation and managing how to place it accordingly.
- Add small-scale social seating for interactions that can support enhanced self-realizations with providing scattered seating places in the park with various number of seating group.

Table II. Features of Restorative Garden

Features	<i>JOURNEY</i>	<i>SENSORY</i>	<i>SELF</i>	<i>SPIRIT</i>
View of plants from inside				
Verdant surrounding				
Moving water (loud)				
Moving water (soft)				
Reflective water				
Crossing bridges				
Changing microclimate				
Changing vistas/sounds				
Thresholds (constricted nodes)				
Fragrance				
Non-threatening wildlife				
Seasonal changes				
Auditory stimulus				
Physical challenge				
Cultural memories				
Ephemeral				
Celestial				
Religious Icons				
Safe resting places				
Private space				
Social space				

Source: Hopper, Leonard J. (2007) *Landscape Architectural Graphic Standards*. USA: John Wiley & Sons Inc.

4. Spiritual Attunement

- Incorporate a sense of preciousness with giving chances to choose what kind of activity in what part of the garden based on user necessity and preference.
- Making connection with other species (non- threatening wild species, other than birds) which is interaction with butterflies.

Enabling garden

Enabling garden is a garden that assists in the process of restoration of the physical and cognitive ability through positive interaction with plants with the purpose to maximize physical function by adding social and psychological abilities. A little bit different with restorative garden, enabling garden would be more effectively designed for special schools.

Enabling garden design is providing three levels of engagement; activities, opportunities, and challenges. Following is what activities levels providing:

- Enhancement of physical abilities with providing physiotherapy program and designing exercise path,
- Providing gardening and socializing in nature experiences,
- Supplying sensory exploration in which providing visual stimuli with vegetation in various shapes, types, and colors; providing hearing stimuli with moving water sensation; providing smell stimuli with aromatherapy; and providing tactile stimuli with various textures of vegetation and materials,
- Giving a sense of task completion when doing rehabilitation in the garden,
- Giving chances for interaction with others and working together supported by the design of seating area as part of social therapy,
- Giving the sense of reward of harvesting vegetables, herbs, and flowers as part of gardening program in physical and occupational therapy.

Even though it would be more effectively designed in special schools, but it is also applicable in regular school with adapted principles.

For designing a therapeutic landscape, there are few guidelines that could be followed, as following:

- Have variety types of space, so that the user has the opportunity to choose, for example, between space with privacy or groups.
- Dominance of green material by minimizing land pavement until 2/3 of the land is dominated by green fields
- Providing positive distractions with the activity of gardening and working with plants, flowers, and which accompanied by the sound of water, could reduce stress;

- Minimize the disturbance from outside, such as smoke, dust, noise, and artificial lighting in the park;
- Entrance that invite the user to enter;
- The water elements that can affect aspects of psychology, spiritual, and physical positively;
- The emphasis of nature as the foundation of the design features, such as the use of stone elements, natural fences, wind, sound, etc.;
- Enhance biodiversity and habitat for diverse species;
- Simplicity, which has a form that easily understood by the user;
- Diversity in the shapes, textures, colors, and seasonal to provide sensory stimulation for the user, because a park that disinterested by the user can also provide the effects of stress;
- Each focal point in the garden section, so that the user gets a certain orientation when in it;
- The transition phase in the garden space is smooth and focused, for example, from a public area to private area;
- Using a scale that is friendly to user.

E. Therapeutic Landscape in School Environment

Therapeutic landscape as a media to create a positive school environment could be adapted as school park or school landscape which designed to reduce stress. In general, the existence of a park in a school could improve the performance of the students; even it is not designed especially as a therapeutic landscape, based on above principles. However, it is also a fact that being in nature itself is a therapeutic movement, as being in nature or just seeing a picture of nature could reduce stress itself.

How to create an environment, based on a therapeutic principles, that suitable in school environment. It should not too complex because it could affect arousal and performance in that setting (e.g., Evans, 1978). Too many stimuli might distract the students, create overload, or increase fatigue. However, a setting that extremely simple might be boring and equally detrimental to student performance (cf. Sommer and Olsen, 1980). As every student might have different preference about what kind of environment that suitable for them to learn, it could be facilitated by providing a few zones of different environment for them to choose as their learning space. How happy the student is in the setting might be the most important factor for all (Santrock, 1976), and working for the right fit between student and learning environment is probably worth the effort.

Among a few landscape areas in school, following are landscape areas that could be adapted with therapeutic landscape principles:

- School field

School field is a landscape area in school where student could do some sport activities such as running, soccer, football, etc. It has the widest area in general and covered mostly by grass. Because of the function as sport activity area, and dominated by grass, how to include therapeutic principles in this part of school landscape is by creating green surrounding of the field (Figure 1). It also provide not only one seating area for watching the sport activities but also scattered seating area of the field surrounding as alternative choices for the student.



Figure 1. School field with green surrounding.

Source: www.telegraph.co.uk, www.st-francis.lancsngfl.ac.uk (June 2013)

- School courtyard

School courtyard is a place where student usually meet up and socializing with other students during lunch, school break, or after school. It is usually located in the middle of the school area as connecting landscape which connects one school building to another. Depending on the design, it could serve the purpose as outdoor classroom, which could be designed like integrated amphitheater. Because of many of student activities could be hold in this part of school landscape area, it should be designed accordingly, by creating a comfortable space with various vegetation, combination of hard scape and soft scape, designed seating area, water feature, and vocal points in certain area.

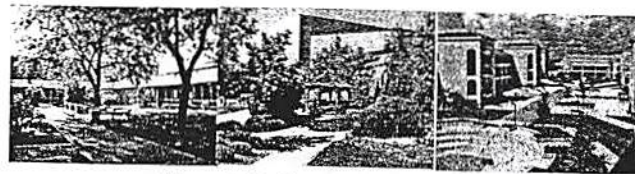


Figure 2. Designed school courtyard

Source: warriorcatsrpg.com, montcrossareachamber.com, en.wikipedia.org/wiki/ (June 2013)

- School garden

School garden is a place for student to learn about nature by doing various gardening activities, such as planting and harvesting vegetables/herbs. From its

principles and function, this part of school landscape is categorized in enabling garden which usually featured in special schools. However, nowadays, the need of school garden existence not only necessary in special schools but also in regular school, due to its positive effect in student daily performance in school. Nowadays, many schools abroad, for example in New York state school, already including gardening as part of their curriculum, as part of outdoor classroom activities.

According to few research, third, fourth, and fifth grade students who participated in school gardening activities scored significantly higher on science achievement tests compared to students that did not experience any garden-based learning activities (Klemmer et al., 2005) and elementary school and junior high school students gained more positive attitudes about environmental issues after participating in a school garden program (Waliczek and Zajicek1999). Aside of those reasons, being in a garden also have many positive benefit in relieving stress, better mental health, brain health, and as alternative exercise activities⁵.

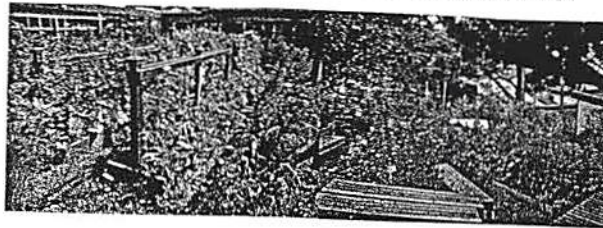


Figure 3. School garden

Source: www.teichgardensystems.com, www.familiesonline.co.uk (June 2013)

- Classroom view

Depend on the location, either school field, school courtyard, and school garden could provide the view from classroom. View from classroom could be provided from classroom windows. Windows that are too wide could be a distraction, but enough amount of natural view could bring soothing feeling in to the classroom.



Figure 4. View from classroom window

Source: armn.org, www.uvm.edu (June 2013)

⁵Anne Harding, Health.com, June 2013

Results

The human relationship with nature has a very deep meaning. It can be seen from the human behavior which travels to nature due to the tiredness of everyday life, such as going to the beach or the mountains. If examined more deeply, the benefits of the nature turns out to be more than just something beautiful or soothing. Various studies of the stress and non-stress people proves that looking at photos or pictures of landscapes could reduce the level of stress and increase relaxed feelings. Nature restores central emotion on the limbic system on the brain by inflicting biophylic response such as comfortable and amused feeling. In familiar natural environment, it will elicit relaxed and positive feeling (Grahn and Stigsdotter, 2002).

It is also supported by Nakamura, Fujii (1990) found that the humans will be more relaxed waking-up when they see a pot plant flowers than when looking at pots without plants. On the research afterwards, Nakamura, Fujii (1992) recorded EEG (electrocephalogram) or the activity of brain waves at the person sitting on the actual outer space setting of green scenery, on people who see a concrete fence, and on people who see some green scenery and some of the concrete fence. Conclusions from the results of this research is that the green scenery can give a feeling of relaxed, while concrete has influence in causing stress feelings. Various studies show that the utilization of nature appropriately may reduce stress (Tyson, Lambert, and Beattie, 2002). Integrated nature in school landscape area, not only relieving student stress, but it also has many positive benefits, even improving student achievement in school.

Therapeutic landscape in school environment is both directly and indirectly supporting the "Education for Sustainability" (Efs) and "Education for Sustainable Development" (ESD) which have largely replaced the term of "Environmental Education" (EE), as the concept of sustainability. While it's complex and difficult to define, it recognizes the interconnectedness of economics, culture, society and ecology. The main International driver for Efs/ESD is the United Nation Decade of Education for Sustainable Development (2005-2014), with the goals of the Declare are to integrate the principles, values, and practices of sustainable development into all aspects of education and learning, this educational effort will encourage changes in behavior that will create a more sustainable future in term of environment integrity, economic viability, adjust society for present and future generation. The following are characteristic of Efs:

- concerned with how human interact with their total environment and with addressing sustainability issues holistically through curriculum;
- employs 'synthesis' as methodological approach, which assumes that studying interdependence and the nature of complex systems and interactions leads to the emergence of new properties; investigates the environment scales;

- and recognizes that engagement in environmental improvement extend beyond the cognitive to an individual sense of responsibility generated by a personal environmental ethic.

Conclusions

The effect of global warming is inevitable in human life. Even the effects of changes in human behavior caused by the negative effects of global warming are not easy to be eliminated in the life. An effective way to change the effect of global warming is by designing an environment which is able to provide a positive effect for the improvement of human life.

Effective and innovative ways to transform the environment for creating a better learning process in schools is a therapeutic landscape in the school environment. Therapeutic landscape as a medium to create a positive school environment could be adapted as school park or school landscape which designed to reduce stress. In general, the existence of a park in a school could improve the performance of the students.

With the existence of therapeutic landscape in school environment, school has contribution in building and repairing the school ecosystem and creating a better quality of learning environment. In addition, school will be turning to a place which is very effective to learn as well as a place to reduce the stress of the people in the school environment due to the increasing effect of global warming and the necessity of relaxation media in people everyday life.

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