

**THE IMPACTS OF ENVIRONMENTAL AND SUSTAINABLE EDUCATIONAL EXPERIENCES:
CASE STUDY IN HONG KONG MA WAN PARK**

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Abstract:

Environmental education experience in parks has been neglected in literature. This study aims to explore environmental and sustainable educational experiences of visitors in Hong Kong Ma Wan Park where is a nature park that combines nature, learning, and arts. The authors conducted 24 in-depth interviews with visitors to explore the views on those environmental and sustainable educational experiences. This experience is defined as visitors' knowledge acquired through visitation, and changes of attitude and behaviours toward environmental sustainability. Data analysis shows that visitors' environmental education experiences are reflected in "7 Rs": 1) Refocusing on green education, 2) Reinforcing pro-environmental behaviour, 3) Responding for sustainable development, 4) Rekindling low-carbon lifestyle, 5) Respecting nature, 6) Retrieving tree information, and 7) Relaxing and enjoying art in nature. Result suggests those experiences can enable visitors to acquire authentic, professional, and specific knowledge about nature, to develop appreciative and responsible attitudes toward environment, to show philanthropic support of environmentally sustainability, and to prompt environmentally responsible behaviours. The findings of this study show that the environmental education experiences can be 5I's inspiring, influential, informative, interactive, and innovative in terms of influencing visitors' awareness, value, attitude, and behaviours for environmental sustainability. This study provides insights for other nature parks to design and implement creative, artistic, and interactive environmental education experiences for visitors about environmental sustainability. Implications, limitations, and future research directions were discussed.

Keywords: Environmental Sustainability, Environmental Education Experiences, Nature Park

Introduction

The extreme weather conditions urge for the urgency for environmental protection, energy saving (William & Hudnut, 2008). Hence, sustainability and conservation are essential for living (Maser, Beaton, & Smith, 1998). Sustainability has become a touchstone for development (William & Hudnut, 2008). Environmental education has the function to influence the positive changes in attitude and behaviour to cope with the climate change, biodiversity loss, and environmental degradation. The pace of environmental degradation is fast, so environmental education should educate people about the physical environment and to inspire people to live green. Environmental education has failed in part because in indoor classroom fail to let learner to feel the beauty of nature in outside natural area (Saylan, & Blumstein, 2011). Also, environmental education experiences in nature parks are unexplored. The aims of this to explore visitor's environmental education experiences in Hong Kong Ma Wan Park.

Background of Ma Wan Park

Ma Wan Park is a nature park that combines nature, learning, arts, and love, with an emphasis on interactive instruction. Ma Wan Park attained an award "Your Most Favourite Nature Spot" from U magazine. The winners were chosen by the public, so the award is a proof of people's support for Ma Wan Park's conservation efforts (Ma Wan Park, 2019). Ma Wan Park encourages care for the environment and enable people get close to nature and combines nature,

education, and art to promote positive values like love of life, family, and the Earth. Its 5.6-hectare Nature Garden has over 1, 000 native trees and is opened to the public for free (Ma Wan Park, 2019).

Literature Review

Sustainable Development

Sustainable development refers to a series of processes on the improvement of human life (Blewitt, 2008; UNSGHLPS, 2012). We cannot just focus about satisfy humanity's needs without support life-sustaining systems (Lambin, 2005; Brinsmead & Hooker, 2011). Human beings are interdependencies in a single global system (Moldan et al. 2012). Sustainable development is the goal (Hove, 2004). It must use the sustainable development process to achieve sustainability (Prugh & Assadourian, 2003; Sartori et al. 2014; Stiglitz, Sen, & Fitoussi, 2009). To operate towards sustainability, we should realize we are part of a larger system in business ecology and extends the willingness to examine the larger socio-economic system and how we impact it at the individual, community, and organizational level, and eventually at the planetary level (Laing & Frost, 2010). Hence, green value propositions include contributions to the physical environment of buildings, community, and the global environment (Swarbrooke, 1999). It is beneficial to stakeholders to make environmental sustainability as determination (Ahmad et al. 2013). Nature parks is one of the key stakeholders influence and educate visitors about environmental sustainability.

Environmental Education

The process of education should emphasize active, experiential, inquiry-based learning and real-world problem solving in the larger community (Cortese, 2003). Education experiences acquire information about green practices provided by education institutions (Boo & Park, 2013). Environmental orientation included environmental interest, knowledge about nature conservation and engagement in environmentally responsible behaviours (Ballantyne et al., 2011). Free choice learning refers to the type of learning that occurs when individual exercise important choice that can occur outside schools (Falk, 2015). It refers to the self-directed learning in national parks and nature centre (Falk, 2015). Providing experiences for learners about ecological principles and facilitating the understanding about their roles between natural environment (Farmer et al, 2007). Authenticity is a critical factor in considering education content, environmental issues, and environmental changes (Uzzell et al, 1994). The education activities in natural parks are authentic and interesting than in classroom to attract visitor's interest, attitudes and to influence their perception about creatures and environment (Cavas & Eylul, 2011). Thus, learning at nature parks can provide visitors ecological and environmental knowledge (Lugg & Slattery, 2003). Helping learners to learn how to love the earth is a high calling and can be conducted through ecotourism (Kimmel, 1991). Once people begin to understand the environment, they can appreciate the environment deeply and respect the environment (Butler, 1993). Hence, the nature parks play a significant role to inspire visitors to cherish the nature. Nature experience can foster a sense of commitment (Russell, 1999).

Nature Parks

Nature Parks provide conservation education, to engender pro-conservation attitudes, and to encourage the public to support conservation efforts (Ballantyne et al., 2008). The strategy of emphasizing the pro-conservation elements and education opportunities packed in the experiences that can attract visitors (Ballantyne et al., 2008). The influence within national parks and protected areas have changed the interviewees' knowledge and attitudes (Hughes &

Saunders, 2005; Madin & Fenton, 2004; Tubb, 2003), Ecotourism experiences and their influence on interviewees' knowledge, attitudes, and behaviours. However, knowledge may increase, but environmental attitudes and behaviors show no change (Beaumont, 2001; Cable et al., 1987; Lee & Balchin, 1995; Lee & Moscardo, 2005; Morgan et al., 2003; Orams, 1997; Tubb, 2003; Wiles & Hall, 2005). Hollinshead (1999) Welford et al., (1999) argued that the primary motives of nature-based tourists expect entertainment, comfort, and consumption. Whereas research has proved the positive effects of wildlife tourism on visitors' environmental knowledge and attitudes, by raising visitors' awareness of sustainability and behaviours (Ballantyne et al., 2011., Ballantyne et al., 2007; Ballantyne and Packer, 2009; Lee & Moscardo, 2005; Tisdell & Wilson, 2005).

Methodology

This study uses a qualitative approach to explore visitor's views on environmental education experiences in Ma Wan Park. Qualitative research emphasis on words rather than numbers (Maxwell, 2013). It aims at understanding things rather than with measuring them (Gordon & Langmaid, 1989), It focus on subjectivity and the authenticity of human experience (Silverman, 2013) allows the researcher to gain an insight into the different meanings, perceptions, feelings, and attitudes of research subjects (Holloway et al., 2010). The researchers conducted 24 in-depth interviews with Ma Wan Park visitors. Ma Wan Park was chosen because it is a nature park that combines nature, learning, art, and love, with an emphasis interactive instruction. The researchers used purposive sampling for obtaining informative data from interviewees who visited Ma Wan Park. The sample group comprised twelve females and twelve males. Interviewed are all aged 30-65. Their education levels were secondary (7), undergraduate (9) and postgraduate (9). Interviewing would be discontinued once 'saturation' was reached. At that point, no further insights would be forthcoming from the interviews (Myers, 2019). Data collection took place in Ma Wan Park. The researchers adopted in-depth semi-structured interviews lasting 45 to 65 minutes at the park. Questions were designed to elicit responses regarding each interviewee's views about their environmental education experiences in Ma Wan Park. Responses were analysed using manual coding, scanning the recordings, and flagging emergent themes and common views (Veal, 2006). Finally, the results were grouped into similar conceptual areas according to prevalent themes.

Findings and Discussion

The purpose was to understand visitor's environmental education experiences in Ma Wan Park. It is a nature park that combines nature, learning, arts, and love, with an emphasis on interactive instruction for providing meaningful environmental education experiences for visitors (Ma Wan Park, 2019). It offers community education about green management and conservation, to engender pro-conservation attitudes, and to encourage the public to support conservation efforts (Ballantyne et al., 2008). The strategy of emphasizing the pro-conservation elements and education opportunities packed in the experience could attract visitors to experience (Ballantyne et al., 2008).

Education experiences acquire useful information about green practices provided by formal and informal education institutions (Boo & Park, 2013). One challenge facing environmental educators was how to teach an urbanized population about nature. It is important to recognize and reaffirm the deep interconnections with the rest of nature if we fail to venture beyond the classroom (Bell, 1997). Ma Wan Park is an informal outdoor classroom to allows learners to develop knowledge that classroom could not offer the natural, interactive, and authentic experiences. Also, education should emphasize active, experiential, inquiry-based learning and real-world problem solving in the larger community (Cortese, 2003). Authenticity is a critical

factor in considering environmental issues (Uzzell et al, 1994). Thus, learning at nature parks can provide visitors not only ecological and environmental management information but also the authenticity of local knowledge (Lugg & Slattery, 2003) and green knowledge. The education activities in natural life parks such as Ma Wan Park are more authentic and interesting than in routine classrooms to attract visitor's motivation their perception about environment (Cavas & Eylul, 2011). Thus, visitors would understand the true meaning of "nature" (Miles, 1991).

Ma Wan Park enables learners to adopt flexible learning. It let learners choose and control over their learning outside schools (Falk, 2015). It is a self-directed learning that regularly occurs in settings like national parks and nature centre, (Falk, 2015). Hollinshead (1999), and Welford et al., (1999) argued that the primary motives of nature-based tourists are looking for entertainment, comfort, and consumption, it may be unrealistic to expect them to support sustainable practices through overt behaviour. However, Ma Wan Park provide experiences for learners to learn about ecological principles and facilitating the understanding about their roles and relationship between natural environment (Farmer et al, 2007). Once visitors begin to understand the environment, they can appreciate the environment and commit to protect the environment (Butler, 1993). Familiarity with nature can helps to develop close relationship with nature, and based on this closer relationship, people develop a determination to live green and in harmony with the nature (Pendleton, 1983). Hence, the nature parks play a vital role to provide a venue for visitors to understand and feel about the nature authentically. In addition, nature experience can foster caring, commitment, and action (Russell, 1999). After visiting Ma Wan Park, visitors would realize the pressing needs to protect the beautiful landscape and natural resources. The goal is to nurture environmental interest, knowledge about nature conservation and engagement in environmentally responsible behaviours (Ballantyne et al., 2011). The motivation for facilitating the learners about the environment is to develop learner's affection for their world, with the hope that such affection will lead to supportive and responsible behaviour. Helping learners to learn how to love the earth is a calling and can be conducted through ecotourism (Kimmel, 1991). Whereas research has proved the positive effects of environmental education experiences on visitors' environmental knowledge and attitudes, by raising visitors' awareness of sustainability and environmentally friendly attitude and behaviours (Ballantyne et al., 2011., Ballantyne et al., 2007; Ballantyne and Packer, 2009).

The results of in-depth interviews visitors' perspectives on their environmental education experiences that reflected on values, attitudes, feelings, and behaviour. The environmental education experiences in Ma Wan Park were perceived as 5I's informational, influencing, innovative, inspiring, and interactive. It inspired visitors to acquire more knowledge about the nature, embrace responsible environmental attitudes and engage in pro-environmental behaviour. The results 7R's was revealed about the insights of visitors' environmental education experiences:

- 1) Refocusing on green education
- 2) Reinforcing pro-environmental behaviour
- 3) Responding for sustainable development
- 4) Rekindling low-carbon lifestyle
- 5) Respecting nature
- 6) Retrieving tree information
- 7) Relaxing and enjoying art in nature

Refocusing on Green Education

Ma Wan Park is a tourist attraction and nature park that combines nature, learning, arts, and love, with an emphasis on interactive instruction. The process of education should emphasize active, experiential, inquiry-based learning (Cortese, 2003). Provide green education experiences (Boo & Park, 2013) through the interesting activities organized by Ma Wan Park. Programs include environmental interest, knowledge about nature conservation and engagement in environmentally responsible behaviours (Ballantyne et al., 2011).

I can learn the exotic species, biological diversity as well as to learn how to protect our earth. The interactive and outdoor nature park allow me to develop a sense of appreciation and responsibility towards the planet.

Ma Wan Park is an excellent venue for providing visitors to become environmentally conscious through interactive and authentic experiences.

We learnt a wider perspective of nature environment and hold initiative-taking attitude towards environment protection. My kids have found the interesting knowledge of trees and have develop positive attitudes toward environment protection.

Reinforcing of Pro-Environmental Behaviour

Pro-environmental responsibility must be adopted for ensuring environmental sustainability. Reinforce environmental behaviour in all facets of life including special moments is the most convincing way to protect the environment.

After attending this solar cooking activity, I will do my utmost to reduce energy consumption.

Green nature program with full steps of green consciousness encourages me to engage in eco-friendly.

Responding For Sustainable Development

All life on earth is interrelated. Climate change affects all the creatures and environment on earth. To respond for sustainable development, Ma Wan Park takes a role to spread green knowledge to educate visitors to respond to sustainable development attentively. Motivating visitors to engage voluntarily in pro-environmental behaviour in their daily life is expected to contribute to environmental sustainability. Ma Wan Park promote the green wedding to response to sustainable development. Guests can hold green wedding ceremony, students can join the study tours, elderly can walk freely, and visitors can appreciate the beauty of the plants relaxingly. Ma Wan Park is a garden dedicated to the collection, cultivation, preservation and display 400 diverse kinds of vegetation, including 100 indigenous tree species.

We appreciate the beauty of plants, and we want to cherish every plant and refocus green world, which helps to increase the sustainability conscious, as well as minimize environmental risks.

It helps to nurture a sense of personal responsibility towards the natural environment and educate the visitors to cherish all the natural beauty and sustain for next generations. Ma Wan Park take a role of balancing between conservation and meeting the visitor's needs, it serves an important channel to spread the message of sustainable development.

Rekindling Low-Carbon Lifestyle

Visitors are educated to change their lifestyle in a more ecologically favourable way. For example, participate in recycling activity and buying eco-friendly products (Kalafatis et al., 1999; Laroche et al., 2001; Manaktola & Jauhari, 2007). A low carbon lifestyle makes a better place to live. Unlike waste that is tangible of impact on the environment, energy is intangible that treated as an unavoidable cost (Yu et al., 2012). All the activities organized in Ma Wan Park were energy saving. Only sunlight is used. No air-conditioning and fan were used.

Ma Wan Park is a good outdoor classroom to educate visitors to live green. It is commendable to see management are devoted to plan, implement, and promote Ma Wan Park. All visitors are inspired to take part to change the world into a better and greener place for you and me!

Protecting environment is not merely an attitude, daily action is required. Buying products from local farmers not only can guarantee fresh and delicious fruits and food, but also can reduce money and save time during transportation process.

I make sure that I turned off the lights, phone charger and all electric applicants when not in use. It helps to reduce unnecessary electricity waste. Switch to compact fluorescent light bulbs and use bicycle and walk more.

Respecting Our Nature

Nature experience can foster caring, commitment, and action (Russell, 1999). Improved visitor's connectivity to the natural world. Environmental education experience in the Ma Wan Park arouses visitor's environmental awareness and appreciation.

I realized that nature should not be taken for granted. It is a highly integrated and interdependent functioning system upon which all life forms. I am connected to nature, rather than isolated from nature.

Retrieving Tree Information

Ma Wan Park held a program called 'Hundred Little Tree Trailblazers lead Ma Wan Tree Blossom' visitors were invited as little tree trailblazers for the Park's Tree Blossom programme on Earth Day (Ma Wan Park, 2019). In addition, the Ma Wan Tree Blossom smart phone mobile app called 'iTree Hunt photo contest and iTree Tour' launched to inspire more visitors to learn more about how to cherish the nature..

Tree Blossom activity with eco-tours led by tree surgeon to introduce different trees with a smartphone application. I appreciate those creative and digital ways to educate the visitors.

By using Ma Wan Tree Blossom mobile application, I acquire information about 100 tree species and their features. The application introduces lots of interesting facts of a wide range of native trees to arouse public interest and raise awareness of conservation. Its GPS tracking function enables users to identify the location of different tree species in the park at their fingertips, bringing a whole new tree appreciation experience to visitors.

I learnt the professional knowledge about native trees in Nature Garden through iTree Tours guided by professional arborists. After reading the tree knowledge via mobile application, I

learnt that Lichens could grow on tree bark, bare rock, sterile soil, sand, dessert & even polar region as well as used to make test paper for acidity.

I joined the iTree Hunt photo contest. By capture my impressive images of the tree or plant in Ma Wan Park and upload their entries to Facebook.

Relaxing and Enjoy Art in Nature

Ma Wan Park captivate natural sceneries and four popular landscapes including the European-style Sweet Garden, the Hilltop Lookout which overlooks the Tsing Ma Bridge, Rambler, and Ma Wan Channels: The Golden Mean Plaza and the Rainbow Fall (Ma Wan Park,2019). The natural environment of the park is well preserved and provides an ideal home to over a thousand of native trees and a wide range of insects and animals. With its artistic design and natural scenic beauty, Ma Wan Park is an ideal location for drawing. To encourage people to enjoy the fun of creating art in the natural environs, Ma Wan Park has held lots of art programmes to inspire Hong Kong families' creativity amid its natural scenic beauty. Professional instructors teach visitors to enjoy art in nature. While art is inspired by our lives, our lives are associated with nature. Visitors can experience and enjoy green living in the park, while learning the importance of preserving nature. The unique and spectacular landscape of Ma Wan Park provides painters with boundless inspiration and creative ideas. Visitors in Ma Wan Art Jam workshops got the chance to paint on native wood. By providing a chance for the family to create art together, the workshops aimed to improve the communication and bonding among family members, strengthening parent-child relationships. The excerpts below describe the contributions that a nature park can bring in busy city. It shows that the nature park can be a significant outdoor classroom. Ma Wan Park provides visitors with easy access to the beauty of the nature and enjoy art simultaneously.

I joined the drawing and painting camps, I appreciate the natural beauty and drawing together in such beautiful outdoor venue.

I have spent quality times together in nature and appreciate art. It enhances our family bonds. It is special that nature and Art Jam are integrated, I can also completely relax my mind.

I love the Art Jam workshops to draw on native wood. After attending the art jam workshops, I learnt that every single item or even rubbish can turn to be an art product.

Conclusions

By studying environmental education experiences in Ma Wan Park, the insights gained from visitors, these contributions are 7R's are refocusing on refocusing on green education, reinforcing pro-environmental behaviour, responding for sustainable development, rekindling low-carbon lifestyle, respecting nature, retrieving tree information, and relaxing and enjoying art in nature. Additional research to further explore other nature parks in world and its meaning for visitors is needed. The result suggests that Ma Wan Park environmental education experiences can enable visitors to acquire knowledge, raise environmental awareness and encourage green living. Ma Wan Park was perceived by all the study visitors as a valuable nature classroom which raised environmental awareness, upheld moral obligation to engage in green living, and induced visitor's greater pro-environmental behaviour for sustainable development. This research contributed to provides empirical evidence in environmental education experiences of visitors of Ma Wan Park. This study contributes to environmental education literature in relation to nature parks and to managerial practitioners about how to plan, implement environmental education experiences to educate visitors' knowledge about

sustainable development, environmental protection, and green living. The results of this study highlight the significance of nature park as a channel to nurture visitors about environmental protection. Future researchers may use focus group to draw out visitor's memories of experiences about the environmental education experience of other nature parks in the world.

Managerial Implications

Based on the results, some implications for nature park management to enrich visitor's environmental education experiences are recommended.

Recommendations to Nature Park Management

- To design more innovative learning-based activities that can be implemented in parks for the mass public and overseas visitors.
- To launch and promote different theme of interactive, informative, inspiring environmental education program and events regularly.
- To use social media as a key interactive channel to promote all the information and activities.
- To coordinate with educational institutions to weave a promising future for nature habitat and public education.
- To encourage the visitors to use public transportation and use eco-transportation inside the park area.
- To use renewable energy such as solar power inside the parks.

Limitations

This study has several limitations which the authors attribute to the relative weakness of interviews to present valid, reliable, and trustworthy empirical evidence. Consequently, it is recognized that the results of this study present a snapshot of views amongst a specific group of visitors at Ma Wan Park. Even the authors make no claims regarding the generalization of the results, this study has indicated a concentration of the environmental education experiences in Ma Wan Park. This finding should be of interest to the management of all nature parks.

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