

The Perceptions of Students of the Need to Protect the Environment

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Abstract

Rapid industrialization and unplanned urbanization have led to far reaching processes of social change in human history. In recent decades the exploitation of the environment has increased and affected the ecological balance on an alarming scale. Society desires responsible citizens who meet the needs of the present without compromising the ability of future generations to meet their own needs. Local and global initiatives have emerged to make this world a better place to live in. One of the best ways suggested by researchers and policy makers is to develop environmental sensitivity and awareness among the student community. The present article focuses on the perception of school children about the need to protect the environment through an in-depth empirical investigation. Thirty-one focus group discussions were conducted amongst students to explore their perceptions. These perceptions were categorised into major themes such as environment and well-being, enjoyment of nature through sensory perception, aesthetic experience and biophilia, environment as a provider of resources, environmental issue experience, conservation of natural resources for future generations and environmental values. The suggestion from students to have more experiential programmes is also the highlight of the study.

Keywords

education, values, protection, environment

Introduction

Recent decades have witnessed a growing concern over the deteriorating environment through diverse initiatives locally and globally. The report on the comprehensive global status of the environment is published

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periodically by the United Nations Environment Programme (UNEP) in Global Environmental Outlook (GEO). As per GEO 5, all the components of the environment—land, water, biodiversity, oceans and atmosphere — continue to degrade. The report makes it very clear that it is high time to take effective steps to make life in cities more socially, economically and environmentally sustainable as more than half of the world's population is now living in cities. Half of the people living in developing regions have no access to improved sanitation. Around 13 million hectares of forest were converted to other uses or lost through natural causes each year between 2000 and 2010. Enormous areas of the Amazon rainforest were cleared. The report gives us the information that, on average, 52 species per year moved one category closer to extinction from 1980 to 2008. According to rankings from four top US, British and Japanese climate research centres, the ten hottest years on record have occurred since 1998. The rapidly diminishing ozone layer above Antarctica, the steady rise of carbon dioxide in the earth's atmosphere, observed increase in global average temperature, rise in the sea level, diminishing mountain glaciers, depletion of fish stocks and oceanic acidification are some of the other pressing environmental issues. Through GEO 5, the intergovernmental panel on climate change (IPCC) conveys that anthropogenic causes are behind these environmental issues. In its report to the policy makers, the IPCC strongly recommends that careful stewardship of the planet's natural resources is required to ensure the health of our environment (UNEP, 2011).

Environmental Concern

'Silent Spring' by Rachel Carson (1962) is considered as the root source of environmental concern. According to Guha (2000), this 'bible' on environmentalism gives an insight into the indiscriminate use of pesticides and urges the careful stewardship of the environment. As a response to the growing concern for the deteriorating state of the environment, many national and international conventions were organised in the last few decades. The declaration on the 'improvement of environment for the present and future generation' in the UN conference on 'Human Environment' held in Stockholm (UNEP, 1972) was an historical one. Realizing the central role of education in promoting actions towards environmental protection, several meetings and workshops were held thereafter. The first intergovernmental conference on Environmental

Education (EE) held at Tbilisi, USSR (UNEP, 1977) laid down objectives of EE as helping learners to acquire awareness, knowledge, values, attitudes, skills and participation towards the resolution of environmental issues and problems. According to Chawla (1998), environmental concern and sensitivity can be developed through positive outdoor experience combined with positive role models.

Children and Environmental Concern

Louv (2005) coined the term ‘nature deficit-disorder’, defining it not as a medical diagnosis, but making people aware about the problem that our children are growing up in a society disconnected from the natural world. Childhood experiences may account in part for environmental concern (Gifford and Nilsson, 2014). In a study conducted among the pre-service teachers of Ontario, Canada, the pre-service teachers shared their belief that schools and adults play an important role in developing more pro-environmental behaviour among students. If teachers act as environmental activists they can make a huge impact on the pro-environmental behaviour of students. The pre-service teachers in this study felt that participation in environmental initiatives is essential to empower and motivate students to adopt more sustained pro-environmental choices that would help transform their knowledge into action. The pre-service teachers expressed that schools could lead by example to show what could be done about the environment (Gwekwerere, 2014). According to the research on significant life experiences by Chawla (1998), experience in an outdoor setting as a young person is mentioned as a factor which often affected environmental action and commitment of environmentalists. Environmental education from the elementary to university levels has helped to permeate an ecological worldview among younger generations (Dunlap, 2008).

Environmental Protection in the School System-Global Perspective

As per the Tbilisi Declaration, the goal of EE is to develop citizenry concerned about the total environment, and its associated problems. Schools have a fundamental role to play in preparing our young people to take their place as knowledgeable, engaged, and empowered citizens who will be crucial in shaping the future of communities (Working Group on Environmental Education, 2007). Schools are perceived as agents for the transmission of knowledge, social values and customs to the younger generations. The basic

concerns of education are to enable children to construct a sense of life and expand their potential, to define and pursue a purpose and recognise the right of others to do the same (NCERT, 2005). The school system and curriculum are one of the fundamental structures and frameworks within which the segment of school-going children can be reached and addressed (Panigrahi, 2004). In the past, education about and in the environment was the focus of EE. Now EE involves more emphasis on education for the environment, with the objective of critical appraisal and active participation by all individuals in environmental issues. Students are expected to make decisions for the environment (Department of Training, 2001).

The Belgrade charter, a common framework for environmental education, emphasized that “Environment education should be lifelong, interdisciplinary, involve active global participation and foster values of local national and international cooperation” (UNESCO, 1975: 4). Schools play a critical role in supporting and helping children explore their environment and construct their own meaning from their interactions. This will enable them to initiate work for its sustainability individually and collectively taking together peers and community. Environmental education is a vital tool that helps young people understand the nature and complexity of environmental challenges and builds their capacity to take appropriate action (Department of Training, 2001).

In December 2002, the UN General Assembly declared the period between 2004 and 2015 as the Decade of Education for Sustainable Development (DESD). During the Decade of Education for Sustainable Development (2004–2015), better teaching and learning of environmental education and education for sustainable development (EE and ESD) in schools was one of the main responses to the worsening state of the global environment (UNESCO, 2005). In Rio, during the Earth Summit 2012, member states decided to launch a process to develop a set of Sustainable Development Goals (SDGs) which will build upon the Millennium Development Goals and converge with the post-2015 development agenda. (Leggett and Carter, 2012). A survey conducted among 1,056 public school principals of ten selected states of the US demonstrates that there is significant engagement with environmental education (EE) and sustainability and many public schools are working to make environmental sustainability a priority (Chapman, 2014). In all countries of the European Union, issues associated with environmental education are addressed in the curriculum.

The United States Environmental Education Act of 1990 calls upon the Environmental Protection Agency of the US to work with local education institutions in efforts to support the development of curriculum materials.

Students are an integral and a very important beneficiary of the educational system. Researchers have emphasized and continue to emphasize that students' behavioural changes and involvement in solving problems associated with the environment should be the focus of environmental education in schools (Hungerford and Volk, 1990). Students' perspectives continue to be under-represented as a source of valuable data in reforming schools and education at large. Practitioners and researchers need to provide viable spaces to gain insights into the day-to-day realities of young people and create schools and other learning spaces that respond to the needs of school students (Ferreira, 2012).

The Emergence of Environmental Education in Indian Schools

The imparting of environment education is an age-old tradition of India. Indian traditions, customs and religious beliefs emphasise living in harmony with nature. Since time immemorial environmental protection was a religious duty in India. In India, the first serious initiative relating education in schools to local environmental needs, commenced in 1937 by the father of the nation, Mahatma Gandhi, through the movement of basic education. Productive activity in education; correlation of the curriculum with productive activity and the social environment and the intimate contact between the school and local community were the important components of basic education (NCERT, 2014). The key development in EE in India was the suggestion by the Kothari Commission that basic education had to offer EE and relate it to the life (Kothari, 1966).

The National Environment Policy (NEP) of 2006 is the most recent pronouncement of the government's commitment to improving environmental conditions while promoting economic prosperity nationwide. In India, the National Policy of Education 1986 stated that "There is a paramount need to create consciousness of the environment. It must permeate all ages and all sections of society, beginning with the child" (Department of Education, 1986). EE has been introduced as a regular course in the formal school education system in India following the directive of the Honourable Supreme Court of India. As per the directive, State Government and every Education Board connected with education up to

matriculation stage or even intermediate colleges are to take immediate steps to enforce compulsory environmental education (M. C. Mehta Union of India and Others, 1991).

India is home to almost 19 per cent of the world's children. More than one-third of the country's population, around 480 million, is below 18 years. A total of 560 million are below the age of 25 years (Chandrakant, 2008). The Indian vision for the Decade of Education for Sustainable Development is based on a commitment towards sustainability rooted in a centuries old tradition of living in equilibrium with nature and all its elements. "Understanding of the environment in its totality both natural and social, and their interactive processes, the environmental problems and the ways and means to preserve the environment; knowledge, attitude and habits necessary for keeping physically and mentally fit and strong in perfect harmony with the earth, water, air, fire and the sky" are outlined as the major objectives of education (Department of Education, 1986: 3).

In India, the curriculum on environmental education is prepared by the National Council of Educational Research and Training (NCERT) in accordance with the guidelines laid down by the National Curriculum Framework (NCF) and as per the directives of the Supreme Court of India. It is adopted by the Central Board of Secondary Education (CBSE), the Indian Certificate of Secondary Education (ICSE) and various state boards. The syllabus encourages learners to observe their surroundings critically and understand the importance of a healthy environment. The NCERT has pointed out that good environmental education at the school stage of education is not transformation of information and knowledge but it is all about developing environmental sensitivity and awareness by going out into nature and integrating outdoor knowledge with the classroom environment. One of the guiding principles of the NCF of India is to connect knowledge to life outside school. Curriculum frameworks brought out by the NCERT in 1988, 2000 and 2005 reiterated the importance of EE in school education (Ravindranath, 2012). The NCERT developed a syllabus for EE for 1 to 12 Standards, which was accepted by the Supreme Court and this syllabus has subsequently been reviewed and revised in the light of the NCF. The national system of education, as defined in the National Policy on Education 1986, visualised a national curriculum framework which contains a common core including several elements having a direct bearing on the natural and social environment of the pupils with a priority on the protection of the environment (Ravindranath, 2012). The

NCF 2005 perceives school children as ecologists in their own right who need to be nurtured by a flexible school routine and teachers who engage with children in the construction of knowledge. The NCF 2005 recommends that children's life at school must be linked to their life outside school. This recommendation has been implemented in the new textbooks published since 2006 in all major subjects. In the context of environment-related awareness, the NCF 2005's vision implies an approach which cuts across the traditional boundaries separating one subject from another. According to this approach, knowledge of environmental concerns and the activities, which might deepen this knowledge and develop a positive attitude, need to be infused in the subject matter of all areas of the school curriculum at different stages (NCERT, 2005).

As per the Kerala School Curriculum Framework, one of the aims of education is mentioned as environmental awareness. It states that "A comprehensive awareness on the need to protect environment is the need of the hour. Keeping in mind the vision of sustainable development, we need to develop an attitude in our learners to see meaning in all developmental activities in tune with the environment. They should also develop a sense in preserving all available resources in nature and to utilise them judiciously" (SCERT, 2007: 17).

Research on significant life conducted in the last few decades paid more attention to the formative life experiences of the older generation (Tanner, 1980). To cultivate young environmental citizens, further study should discover the significant life experiences of young people (Gough, 1999). The present study addressed the research gaps by studying the environmental awareness and practices of students through multiple channels and analyzing their formative life experiences.

This study is an effort to find out the environmental awareness and practice in the school system. The research questions are:

What are the perceptions of students on the need to protect the environment?

What motivates the student to be involved in pro-environmental activities?

How does the school system inculcate and sustain environmental awareness and practices among students?

What are the levels of environmental awareness and practices of students?

A mixed-method approach of qualitative and quantitative data collection was used in this study. A sequential exploratory strategy of mixed methods, characterized by the collection and analysis of qualitative data in the first phase of research followed by the collection and analysis of quantitative data in a second phase that builds on the results of the initial qualitative results is used. The study explored the environmentally active students' perception of the influential factors on their current engagement in environmental protection. This article focuses on the students' perceptions, attitudes, experiences, and knowledge about the need to protect the environment based on an in-depth empirical investigation which falls under the qualitative paradigm.

The study was conducted among Upper Primary, High School and Higher Secondary School students within the geographical area of the Corporation of Cochin. The Corporation of Cochin is the largest municipal corporation in Kerala, both in area and population. The Kochi corporation faces severe environmental problems in the air, water and land sectors, ranging from an inadequate water distribution network, depleting groundwater quantity, increasing water pollution, population growth and changing land use patterns that result in the loss or depletion of water resources, air pollution, and inadequate waste disposal systems (ICRA Management Consulting Services Ltd, 2010). The universe of the study was 89 schools under various boards within the geographic area of the corporation of Cochin. The study was conducted in 31 schools covering almost one-third of schools and using purposive sampling.

Focus group discussion (FGD) was used as the method of data collection to gain insight into the perspectives, beliefs, and experiences of children. The tool used was the semi-structured FGD guide consisting of questions related to the perceptions of students on various aspects of the environment. The study was conducted among students belonging to grades 7, 9 and 11 under State/CBSE and ICSE boards to gain insights into their perceptions about the need to protect environment. Questions were asked in an interactive group setting where participants were free to talk with other group members. Each group consists of eight members. Each discussion lasted for between 45 minutes and one hour. FGDs were conducted among students who are either the members of eco clubs or students who demonstrate environmental-friendly activities. Ten FGDs were conducted among 7th grade students, 10 FGDs among 9th grade students and 11 FGDs

among 11th grade students. Altogether 31 FGDs were conducted. Qualitative content analysis of audio transcription of focus group discussions of students was done to find out their perceptions. The data analysis was based on categories that arose out of the questions and probing questions in the discussions and also from new categories that came up during the coding of the data. On close scrutiny, the results fall under seven major themes. The qualitative results obtained are used to form the basis of constructs and some of the items for the preparation of the tool for the quantitative study. Thus the quantitative data was collected with the survey instrument developed based on the constructs evolved through the qualitative process and an extensive literature survey. A total number of 620 students were selected randomly based on grade and gender from state-government/aided and unaided, CBSE and ICSE schools within the geographical area of the Corporation of Cochin using a multi-stage sampling design.

Results and Discussion

Students' perceptions about the need to protect environment were mainly based on their daily life experiences and on the information received from various sources. These perceptions were categorized into environment and well-being, enjoyment of nature through sensory perception, aesthetic experience and biophilia, environment as a provider of resources, environmental issue experience, conservation of natural resources for future generations and environmental values. The respondents were narrating their experiences of direct contact with nature and their observations and the information they received from various sources.

Students were narrating particular incidents and feelings through observation and direct contact with nature which touched them emotionally and aesthetically. They also shared the information regarding the protection of the environment received from various sources. From their comments it was evident that direct contact with nature helped them to take measures for the protection of the environment in their day-to-day life. These narrations were a totality of perceptions, feelings and memory and identified as environmental sensitivity and concern. Eighty students from 7th grade, 80 students from 9th grade and 88 students from 11th grade participated in the FGD. Their narrations are marked as Student 7-1 to Student 7-80, Student 9-1 to Student 9-80 and Student 11-1 to Student 11-88 respectively during the analysis process. In this article, relevant responses from students of different grades are included under each theme.

Environment and Well-being

There is currently an increasing evidence base to show that contact with a wide range of natural environments, in a variety of contexts, can provide benefits for physical and mental well-being (Bratman et al., 2012). According to Kaplan and Kaplan (1989), nature plays a significant role in reducing stress. The more people are in green areas, the less stressed they feel (Norwegian Ministry of the Environment, 2009).

"I have a garden in my home which is taken care of by my mother. At times, when I feel tired after studying for long hours, I take a break and go to my garden which welcomes me with its greenery, brightly coloured flowers and sweet - smell. The rejuvenating feeling I get from this garden cannot be expressed in words. It refreshes my mind, gives me some sort of energy and above all releases that tiredness from my body." Student 9-62.

"Pleasant destinations calm my mind. Soothing touch of the environment makes me happy." Student 11-8.

"I love taking walks and riding my bicycle along landscape that appeal to me. I find it pleasing and enjoyable. Such activities help to soothe the mind and eliminate tension, stress, anxiety etc." Student 9-6.

"Taking bath in the rain helps me to relax." Student 7-39.

"While studying I keep my window open... I can feel the wind and hear the birds sing. I feel a great calm in my mind." Student 11-28.

"Whenever I am stressed from studying too much, I just go out sit under a tree and observe flowers in the garden. My mood changes and I become positive." Student 9-9.

Surprisingly most of these comments dealt with the positive soothing effect of the environment in and around their residence. Only one student mentioned the experience related to well-being in the school system:

"We have very big play Ground. Every week I wait for the PE period. It makes me cool." Student 9-11.

The natural environment improves human moods compared to urban environment (Man et al., 1991). The presence of the natural environment around the house has a positive effect on mental health (Völker and Kistemann, 2011). Contact with gardens relieves stress and provides mood improvement (Cooper-Marcus and Barnes, 1999). Nature offers calmness, a wealth of symbols and experiences that comprise a whole (Norwegian Ministry of the Environment, (2009). The student narratives support the above-mentioned previous studies on the stress-reducing properties of the environment.

Enjoyment through Sensory Perception

“Sensory experiences, and the affirming and encouraging emotions associated with the use of the senses, are fundamental processes in the development of children’s dispositions, knowledge, and skills. Repeated experiences, as well as differing experiences, are required for growth to occur” (Bhagwanji and Simmons, 2014: 9). Students in the present study were trying to associate their perceptions with joyful memories which were similar to the study conducted among environmentalists by Louis Chawla where the basic material of the study was memory (Chawla, 1998). Few students were commenting on the planting of seeds and saplings and the observation of its growth as per the instruction of teachers as the sprouting seed for environmental protection in them.

Children shared interesting stories about their summer vacations which most of them had in village areas where their grandparents and close relatives reside.

“Playing in the rain... enjoyed a lot while making paper boat—watching harvesting are very interesting. I feel very sad when the vacation gets over.” Student 7-29.

“The moment I reach my grandparents’ house, I ran to the tall mango tree with my cousins where their mango tree will be ready with a swing tied for me by my uncle. I loved to be there for hours.” Student 7-44.

“We all have very sweet and joyful memories like planting seeds and small shrubs and playing in the rain.” Student 7-16.

“Playing in the waterfalls, climbing hills, playing in hills makes us happy. My sister and me enjoyed a lot ... eating fruits under the shade of mango tree.” Student 7-26.

“When we were small, I used to play with my friend in muddy land. We used to play cooking, make flute with the leaves of papaya. My grandpa taught me to make watch with leaves. . hm . . . really enjoying days. Now vacations are meant for gaining extra knowledge, different coaching camps.” Student 11-17.

“Picnic to wonderful places, reading books under the shades of trees and sitting in the banks of the rivers were joyful experiences and good memories.” Student 9-46.

“Taking leaves and flowers as vegetables and play cooking. Very interesting.” Student 7-4.

“I always cherish good memories of my vacation at my mother’s house,

plucking guavas, Go to river with my cousins to take bath , taking pebbles from river.” Student 11-5.

“My sister and me were competing to fill our baskets with flowers for making floral carpets.” Student 11-1.

“Those tiny fishes in the small canals near the paddy field were so tricky that the moment we make a move to catch it, it escapes.” Student 7-30.

“My parents also encouraged me to have a concern for the environment.” Student 7-51.

“I am sure that all my field activities with my grandparents helped me to give priority to environmental protection.” Student 11-40.

“Our grandfather used to give us tender coconuts which are very tasty.” Student 11-33.

“Counting the cashew nuts I have plucked and giving it to Uncle and collecting pocket money was a good experience.” Student 7-52.

“I think I wanted to compensate my reduced pleasant memories in the villages and thus joined in the school eco-club.” Student 9-9.

For many, the joy of encountering nature and the nature experience are key motivations for outdoor rambling (Norwegian Ministry of the Environment, 2009).

It is a joy to watch ecosystems teeming with life(Raj, 2011). It appears that the environmentally active students of this study identify positive environmental exposure through sensory perception as a cause for their desire to protect the environment which supports the previous research of examining the autobiographical memories of 42 active members of environmental organisations in the rural areas of Taiwan (Hsu, 2003). The study also supports the view that childhood positive environmental experience leads to environmental sensitivity (Palmer, 1993).

The study provided additional insights into the role models who inculcated environmental awareness and practices among students. The role of elders as sources of environmental awareness and practices were frequently mentioned by the students. Most of them enjoyed nature exposure in the company of family members and teachers. “All it takes is one caring or committed adult, someone who the child can come to trust and learn from, in helping the child develop an attachment to natural environments. This relationship is more about role modelling the enjoyment and marvel of the natural world. It is also a flexible and interactive

relationship, building upon the interests shown by the child as well as language experiences and teaching, that encourages the child to explore, discover, and understand how nature works” (Bhagwanji and Simmons, 2014: 6). Students were highlighting the enjoyment felt through sensory perception. According to Chawla (1998) a family’s values are one of the important factors most often affected by environmental action and commitment of elders.

Aesthetic Experience and Biophilia

Biophilia is the term coined by Edward Wilson which means love of life. According to Wilson’s (1984) biophilia hypothesis, people have an innate need to associate with the natural world, and this connection can enhance their physical and psychological well-being. This ancient need to affiliate with life and lifelike processes, according to Wilson, is probably genetic. Human identity and personal fulfilment depend on our relationship to nature as does the human’s positive emotional, cognitive, aesthetic and spiritual development (Wilson, 1984). Examples of positive environmental aspects include aesthetics. Beautiful, stimulating and identity creating surroundings promote health (Norwegian Ministry of the Environment, 2009). Aesthetic experiences cover a wide range of experiences characterized by feelings of fullness, unity, and an intense sense of being moved. They are visual, literary, auditory and kinaesthetic experiences involving bodily, intellectual and emotional processes (Consoli, 2012). A person can learn to love the world when he or she sees its aesthetic structure (Siegel, 1981).

Students’ enjoyments in nature through sensory perception are also examples of this love of life. Through the processes of enjoyment, children best construct knowledge and practice skills (Bhagwanji and Simmons, 2014). The following narrations shed light on the affinity of children to nature through aesthetic experience.

“I enjoy field trip from school to beautiful places. The cold climate makes me feel so happy.” Student 9-67.

“I do not know why I become so happy when I swim in the river... see monkeys during a picnic.” Student 11-41.

“I feel happy to observe the growth of the saplings I planted in my school.” Student 7-47.

“A tour with my family to ‘Vattavada’ was a refreshing experience.” Student 9-66.

“...I always felt that the tree bend in such a way that I could climb on it. Its strong branches supported me no matter how high I climbed. In summer evening, I would climb there and sit as the wind blew against me and the tree branches could support me and would never let me fall. The feeling I had towards that tree was absolute and cannot be explained.” Student 9-4.

“The cool breeze and the visit to beaches and letting my feet wet and playing in the waves energize me.” Student 7-75.

“We went to Kumarakom once. The place is so beautiful surrounded with water...saw variety of birds, enjoyed the chirping of birds and watching small animals made us happy.” Student 7-6.

“I love Munnar, because it is a place that shows the beauty of earth student.” Student7-14.

“Together we water the vegetable garden in the school and we are proud of that.” Student 7-25.

“Collecting leaves and flowers and making beautiful floral carpets is a good experience. During Onam celebrations we do it at school and at home. Even elders join us.” Student 9-18.

The concept of aesthetics has its origins in man’s apparently never-ending obsession with beauty, be it physical or otherwise. Appreciation of beautiful landscapes is considered as aesthetics in environmental psychology. Observations indicated that students in the study developed a sense of place which shows the relationship they have with a place, which includes emotions and meanings as a result of personal involvement. Opportunities for children to creatively express their feelings and understanding of the natural world are a part of the experience in developing greater attachment with the natural world (Bhagwanji and Simmons, 2014). The student narrations may support the earlier notion that the aesthetic experience in nature provided development of biophilia in children (Siegel, 1981).

Environment as a Provider of Resources

Environmental concern and sensitivity is formed in children through prolonged, repeated interaction with the natural world (Palmer, 1998). Food, water and air are indispensable for survival, and organisms choose a niche where these basic needs are available in a healthy and abundant measure (Raj, 2011). A closer look at the data from FGDs show that the student perception on the need to protect environment seems to be focused more

on environment as a provider of resources. Nature has always provided people with abundant goods and services. Nature has an important role in purification of air and water, stabilisation of climate, abatement of noise, and the like (Norwegian Ministry of the Environment, 2009).

When asked why do we need to protect the environment, most of the students shared the view that nature is a provider of resources. Their comments also shed light on the attitude formed in them due to their environmental exposure.

“We need to protect our environment because it is the only one who gives air, water and land to live.” Student 7-3.

“Environment provide us with plants, pure air and clean water.” Student 7-10.

“We need to protect our environment because without plants we can’t get oxygen, without water we can’t live.” Student 7-12.

“I got some seeds of vegetables during environmental day celebrations. After planting I used to water it. I liked to observe its growth day by day. I was highly excited on the day I could collect the vegetables from those plants.” Student 9-24.

“I got some seeds of long beans from school and I grown it in my home. I was so happy to watch its growth.” Student 9-13.

“Plants and trees give us oxygen.” Student 7-29.

“Rain is essential for all living organisms.” Student 7-44.

“Nature provides us the air we breathe, the water we drink and the land we live. The life support exists only in the presence of it.” Student 7-14.

“It provides us shelter, food, clothe, medicine and support our life.” Student 7-16.

“My grandpa and grandma used to take me to the farm and I used to assist them in collecting vegetables like beans, pumpkin and chilli. Our environment is the greatest giver.” Student 9-8.

“Watching harvesting and milking of cow are possible only in villages. We should not allow unnecessary development and destroy that supplier.” Student 9-39.

“I live in a flat. Only a little space for garden; even though I managed to plant some vegetables. Within two months I got a handful bunch of spinach. I felt so happy.” Student 9-65.

Conservation of nature and natural resources are an integral part of

Indian culture. Modern nature conservation entails a particular attitude towards the use of nature and its resources. That attitude is based on both ethical-ideal and utilitarian grounds. People live by nature and they themselves are part of it. At the same time, we are guilty of managing it in a way that diminishes its productivity and quality that comprise the basis for all life. Nature has always provided people with abundant goods and services. The student narrations give insights in to identifying nature as a provider of resources.

Environmental Issue Experiences:

How to Conserve Natural Resources for Future Generations

Children, particularly those from disadvantaged backgrounds, are exposed to many environmental problems (Thomas and Thompson, 2004). During FGDs, it was clear that children have a good grasp of global environmental issues which they gained through the school system. They were also aware of the local environmental issues through exploration of their own natural environment. While describing their environmental exposure, it was clear that many of them residing in urban areas lacked access to a natural pleasant environment. The students were highlighting the need to take effective measures to reduce the environmental issues in their locality. Here are some excerpts.

“We really need to have system to control these atrocities against the environment.” Student 11-14.

“Junk and waste material are piled up everywhere. Stray dogs were feeding on it.” Student 11-15.

“While we wait in the bus stop, or when we are in the traffic blocks—The pungent foul smell from huge bags of waste dumped all around.” Student 11-87.

“Myself and my sister is suffering from Asthma due to this air pollution.” Student 9-59.

“Though we are surrounded by water, safe drinking water is a dream on many occasions.” Student 11-24.

“Sleepless nights due to mosquitoes and we are scared of chicken guinea. Many people in our area are affected.” Student 7-14.

Pollution in the form of canals filled up and blocked with waste, beautiful beaches converted into dumping yards of chicken waste and plastics, waste piled up in the nooks and corners of streets are highlighted by the students

as the major environmental issues faced by students in their daily life. Students were wondering why the awareness is not turned into practice among the people. Some of the students suggest the need to have more experiential programmes within the school system.

Some of the students' perceptions about environmental issues were based on the information received from various sources. These are ozone layer depletion, deforestation, emission of greenhouse gases, climate change, extinction of animals and the use of plastics. Students also mentioned the importance of protecting the environment for future generations which they learned through curriculum.

"It is important to protect the environment because man-made disturbance to eco system can cause extinction." Student 7-10.

"We need to protect our environment for future generation." Student 9-11.

"If we do not protect our environment, pollution level will increase." Student 11-22.

"Misuse and overuse of resources affected the ecological balance so there is a great need to protect the environment." Student 11-52.

A study of life experiences of Chinese college students identifies that fear of pollution, environmental disasters and loss of natural areas where they played during childhood were also among factors influencing the formation of environmental action (Li and Chen, 2014). From these narratives we can infer that experiencing local environmental issues and awareness of global environmental issues could be the reasons for environmental concern and the participation in pro-environmental initiatives by students.

Environmental Values

The most well-known work on the moral dimensions of pro-environmental behaviours is that of Paul Stern and his colleagues (Stern and Dietz, 1994). According to them, attitudes of environmental concern are rooted in a person's value system. Value-based environmental concerns are termed as egoistic, social-altruistic, and biospheric. Egoistic concerns are based on a person's valuing himself or herself above other people and above other living things. When a person judges environmental issues on the basis of costs or benefits for other people, it is termed social-altruistic values. These lead to concern for environmental issues. Biospheric environmental

concerns are based on an intrinsic value for all living things. Environmental concerns are rooted in a person's interconnection with other people and with the natural environment (Schultz, 2000). Childhood nature experiences are fundamental to enhance sensitivity and empathy towards the environment (Bixler et al., 2002). Childhood environmental exposures develop values and interests in nature (Chawla and Cushing, 2007).

Students who participated in FGDs shared their thinking and concern in relation to bio-physical nature and its issues like planting trees, extinction of animals, throwing waste into bodies of water, use of plastics, and vegetable gardening. Here are some excerpts.

"We need to protect our environment for our future generation to live a happy & healthy life." Student 9-9.

"I feel environment has been providing everything for us. Now we need to protect environment because it protects humanity." Student 7-14.

"When I see people throwing wastes in to the canal I wonder whether they didn't get education and values from parents and teachers." Student 11-15.

"It is essential to protect our environment for our good livelihood, health and survival." Student 7-27.

"We all live in environment and it is a duty of man in the society to protect the environment." Student 9-67.

"We need to protect our environment because it is a great gift from God. We are living in it." Student 11-77.

"Environment is our basic life supporting system. It provides us the air we breathe, food we eat, water we drink and the land where we live. So it is our duty to protect our environment." Student 7-17.

"We need it for our future life and for our future generation." Student 7-8.

"We need to protect the environment for the survival of all living being." Student 9-25.

"We need to protect the environment because we live in the environment. It is necessary for our survival." Student 11-1.

"We need to protect our environment because it protects us from so many things and give us food through plants and also we will get dress...and the air oxygen that is essential for our survival...It also gives us water...But not only for us human beings for all other animals also. It is very important to protect our environment." Student 9-30.

"It is essential to protect our environment for our good livelihood, health and survival" Student." Student 7-2.

Childhood environmental experiences lead to positive attitude towards environment.(Ewert et al., 2005). The direct experience appears to have developed a positive environmental attitude among the students who are environmentally active in their day-to-day life. This process is clear from the comments of the students.

Conclusion

Children's' immediate participation in local traditions of family life, places, schooling and culture is now being reshaped by broader globalizing trends and socio-economic issues of which the technological transformation of daily life is a major concern (Payane, 2014). Education that is confined to the four walls of the classroom will not be able to provide that strong love for the environment. These bonds can only be forged in the vast outdoors, in the local communities and through personal interaction and involvement (Almeida and Cutter-Mackenzie, 2011). The present study shows that listening to student voices can inform the understanding of their perceptions and opinions on the need to protect the environment. Students expressed the need to have more environmental experiential programmes in the schools. This study suggests the launching of a system within the Corporation of Cochin with the active participation of the local community, NGOs, schools and media to provide some innovative nature exposure facility within the Corporation where students can feel the loving embrace of the environment. To study what motivates the student to continue their pro-environmental behaviour and to grasp how the school system can inculcate and sustain environmental awareness and practise among student, an in-depth investigation in the form of a case study of a pro-environmental school is required.

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