

118. School and Children as a Media to Educate the Public about Science

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Abstract. Communication is indispensable to science. Knowledge that is not communicated is worthless. It is also crucial however, that the communicated knowledge is correct. The communication of knowledge plays an increasingly vital role in a global knowledge society facing challenges in areas such as the climate, nutrition, ageing societies, maintaining biodiversity and others. Scientific literacy is increasingly important to function in society. School media (especially children) are the primary source of communicators on science and technologies. Developing effective science and technology based educational programs is more complex than it appears at first blush. This paper tries to explain how school and public science can form a fruitful interaction. The purposes of the study reported here was to document and evaluate the role and effectiveness of our Science eco-club and assess our organizational framework. Science and eco-clubs are a unique opportunity to educate children about science environmental issues. objectives include: (1) educate children about their immediate environment by increasing awareness; (2) impart knowledge about eco-systems ,science and technology their interdependence and need for survival, through visits and demonstrations; (3) mobilize children by instilling a spirit of scientific inquiry into environmental and scientific problems; and (4) involve children in active science and technology, environmental preservation efforts. We have introduced Uniform and Band along with a structured programme of formation of disciplined five teams of student cadet for water, plants, energy, waste management, land use planning, and these disciplined teams are involved in school level or community level physical environmental actions.s exclusively in our School Science eco-club. Our Cadets are the Green Brigade of the school, protecting the natural resources from misuse and promoting the conservation of the natural resources. Final Findings show that the science eco-club provides: Self confidence, new life skills, Model for peer groups, Social responsibility. Remember, our travel should not become travail for others. Let us give it a thought; let us become more considerate towards fellow beings; let us change our attitude and bring in a change. Nature as an arena for the quality of life is a topic of utmost concern, for it will impact on future generations.

Keywords: Mock eco assembly, NGC camps, NGC environmental discipline, Science eco-clubs

Introduction

Science eco-clubs are internationally recognized as a powerful tool to change the community through the activities of children. India's National Green Corps (NGC) Science eco-clubs are a unique opportunity to educate children about environmental issues. Objectives include: (1) educate children about their immediate environment by increasing awareness; (2) impart knowledge about eco-systems, their interdependence and need for survival, through visits and demonstrations; (3) mobilize children by instilling a spirit of scientific inquiry into environmental problems; and (4) involve children in active environmental preservation efforts. The aim of the Science eco-club is to develop a green consciousness social responsibility: and through Our Science eco-club we are trying to groom the Cadets as an environmentally disciplined force. We have introduced Uniform and Band along with a structured programme of formation of five disciplined teams of cadets water, plants, energy, waste management, land use planning, exclusively in our School Science eco-club and these disciplined teams are involved in school level or community level physical environmental actions. Science eco-club activities constitute: (1). Spreading the Word and (2) Launching an Action, as follows. (A) Eco Walks (B) Eco Rallies (C) Eco Demonstration (D) Eco Placards Display and Eco Banners (E) Environmental Road Shows (F) Environmental Speeches (G) Environmental Seminars (H) Environmental Activities and Campaigns (I) Students Environmental Projects (J) Mock Eco Assembly/Parliament and (K) Environment Exhibitions. As part of the science eco-club Activities School environmental Audit Program performed at our school in November and December 2009. Nature as an arena for the quality of life is a topic of utmost concern, for it will impact on future generations. Our Cadets are the Green Brigade of the school, protecting the natural resources from misuse and promoting the conservation of the natural resources. Our science eco-club is expected that there will be huge difference made to the way the resources are consumed and conserved.

Program Design

We live in a globalized world. Acknowledging this, means accepting that we must adapt and prepare ourselves as best we can; so we need to redefine and make changes to meet the new demands of the 21st Century. In education, this has generated a radical turn within classroom and school pedagogical processes. The core knowledge and competencies that support self learning and life-long learning have now a fundamental role in the student's learning process. Many new educational proposals suggest the need of rethinking education, so that students grow up to be good citizens, capable of living together in a democratic, inclusive and pluricultural society within a complex and changing social environment. A competency based education teaches students to develop the knowledge, skills and attitudes that allow them to solve daily problems; to keep learning through out life; to be an ethically responsible person; and to respect and be able to work with others, as demanded by globalized world. It is a means of aiding in the personal development of students that will eventually prepare them for the challenges society and work sets before them.

While some states in the country are still grappling with the implementation of the NGC program, Andhra Pradesh has become the first state in the country to upscale the National Green Corps to cover all the schools in the state through the establishment of the Directorate of National Green Corps. This is a tremendous step towards developing a cadre of environmentally aware citizens.

It has also been the first and only state in the country to implement the Supreme Court's decision on environment education in formal curricula by preparing special textbooks for standards 1 to 10. This is unprecedented in the country.

The NGC program has been appropriately designed to ensure effective implementation. The NGC team has developed a close collaboration with key individuals in the Education Department even on a personal level ensuring adequate support for the program.

NGC Environmental Discipline

Today Environmental Movement in our country lacks focus on "Environmental Discipline". The need of the hour is to create Environmental Discipline in the younger generation. Earlier NGC Students Environment Movement was based on Environmental action. This was a step ahead from environmental awareness. Now since there is a need to move forward in order to protect our environment and ourselves, NGC took a stand to instill Environmental Discipline in 8th class students through 5 NGC Eco club teams in each NGC School. The first step is to promote disciplined movement and action promoting environmental discipline. This is a clear shift of NGC from environmental knowledge promotion to environmental discipline promotion.

National Green Corps programme aims at spreading 'environmental discipline' among school children and involves them in environment related actions in the schools and communities. Children have infectious enthusiasm. They are custodians of natural resources and nature.

We all know that we are part of the environment we live in, and the solution to many environmental problems lie in our attitude towards environment-be it awareness to keep our surroundings clean or the realization to conserve natural resources by re-using and recycling wherever possible. On the surface it looks simple. But changing the attitudes of people is not going to happen overnight.

The best way is to initiate community into action through children. They have no vested interests. They are impressionable. They are our future. They are the single most important influence in any family.

Activities

1. Building 5 NGC natural resource management teams in each school and conducting NGC weekly parade drill for 20 weeks along with band.
2. Conducting Daily Natural Resource Monitoring through 5 NGC students' teams and Annual School Environmental Audit by November every year.
3. Participating in District level parade on 15th August Independence Day and 26th January Republic Day.
4. NGC Eco Club Student Cadets will be in charge of retaining cleanliness in the mid day meals or daily lunch time and also greening the school premises. In the above context NGC trains PET/PD of the selected/registered schools. The NGC training program covers parade drill and natural resource conservation monitoring and environment audit.

Objectives

- To create environmental discipline among school children.
- To train young students for environment action.
- To utilize the unique position of school children for awareness of the society at large.
- To facilitate children's participation in decision making in areas related to environment & development.
- To bring children into direct contact with the local environmental challenges and respond positively.
- To involve children in disciplined action based programmes related to environment in their neighborhood.

NGC Parade Foot Drill

The aim of the drill is to inculcate discipline, improve smartness in appearance, turnout, and self confidence and to develop qualities of team spirit and obedience in the cadets

NGC Camps

Let's learn and enjoy. AP NGC is promoting 'environmental discipline' amongst students through NGC Eco Clubs. Promoting environmental discipline and action are on the agenda for conducting camps at various towns in Andhra Pradesh

Each NGC Camp will cover the following aspects:

1. Drill practice
2. Band practice
3. Natural resource use monitoring and auditing.
4. Visit to locations environment improvement activities

National Science Day on 28th February

It is envisaged that thirst for knowledge and desire to innovate can exist among students at varying degrees of preparedness, from urban to rural regions. To enhance the awareness, interest and opportunities at all levels for innovative thinking, multi-level competitions on regular basis can be of great help. To enhance the need of developing such an attitudes our Science eco-club organized school level celebrations of national science day on 28th February, 2010 in that we conducted essay writing competitions as follows: "Disaster Management Importance of Science" elocution competitions: "Planet Earth-Natural Resources-Sustainability".

Earth day April 22:

Earth day is an annual observance held on April 22 every year to increase public awareness on the environment. Earth day activities offer important point of entry to address world wide environmental concerns as well as opportunities for individual and community to focus on their local environmental problems. Earth day should be used as a powerful catalyst to involve people in making a difference towards a healthy, prosperous and sustainable future. Keeping in mind the importance of Earth Day, the Science Eco-Club celebrated the Earth day-2010 with the active involvement of School Community, on the auspicious occasion of the Earth Day: Cycle Rally cum public awareness programme was conducted.

Week Programme in Our School

We have conduct week long environmental programme in the schools by forming into teams for water, waste management, energy, biodiversity and land use planning by taking an oath to protect environment. On the first day we prepare a school map incorporating the resource we are responsible for including the drinking and waste water routes, waste pockets and location of trees. On the second day our focus is on water tank cleaning and monitoring and tree plantation and plant protection. On the third day, we focus is on planning & making arrangements for rain water diversion & harvesting and Playground, Parking planning, school cleaning, dust bin introduction. On the fourth day, we conducted Quiz, Essay writing and Elocution competitions along with Eco Cultural programmes. On the fifth day we the focused on planning composting of waste and linkage with the local waste handlers and conducting the Mock Eco Assembly and the final day activity is to plan Science eco-club management, Eco calendar and reporting the progress through the School Wall Magazine.

Mock Eco Assembly

Grooming in Leadership and Environment Awareness: Our Eco-club organized A 'Mock ECO Assembly' At our School the Participants Came in Batches, Posing as Legislative Assembly Members from the Ruling and Opposition Parties, Sat at the right and left sides respectively and exchanged views and concerns about environment issues facing the Country. We feel that, we are the future youth leaders presenting our views on the steps to be taken for the welfare of the country and how to work towards achieving India, a dream nation and stand high in the World. As The Mock Eco Assembly Was Aimed At Instilling Confidence, Improving Communication Skills And Environment Awareness In Children at the same time the eco assembly programme are to strengthen the roots of democracy, to inculcate in the young minds healthy habits of discipline, tolerance of views of others and to equip them with the knowledge of assembly procedures and eco friendly practices.

Eco School Audit Process and Green Schools Programme Report

The Eco school audit process assists students in conducting audits and develops action plans on air, energy, land, waste management and water management in the school environment. We are done all the chapters simultaneously, as five teams are working on the five different resources. Five teams comprising of children from class VIII & IX coordinated by the teachers, one each for the five, segments are responsible. There are 5 to 12 children of mixed classes in each group. All the teacher coordinators have found that children are enjoying auditing their particular resource.

Major Findings and Suggestions of Eco School Audit

Water: Sanitation facilities and Rain water harvesting methods have to be improved with the help local public representatives.

Air: Oxygen balance has to be improved by planting and protecting of trees.

Land: Green area has to be improved by planting the trees in the forth coming rainy season and Special policy document has to be followed on land use and biodiversity.

Energy: Renewable energy resources have to be adopted in Mid Day meals Cooking and Using CFL bulbs have to be encouraged.

Waste: Collection of used text books at the end of Annual Exams by the school and to maintain Book Bank and Some manure pits and land fills have to be dogged in the school.

Environmental Camp:

The National Green Core (NGC) and Tirumala Tirupathi Devasthanams jointly organised 'eco camp' has really empowered and ignited the young minds during their 10-day stay at the most popular pilgrim centre of the country. A total of 49 students representing different schools got an opportunity to spend their time learning and enjoying at the TTD from May 22 to 31 as part of their 'NGC-TTD Eco camp'. We were exposed to different activities right from serving the pilgrims at the huge kitchens where free Annadanam is offered to the pilgrims coming from different parts of the country. We visited sewage and solid waste management plants, water filtration beds, nursery management, solar cooking, wind mills learning the alternate sources of energy and energy conservation methods in practice. We only studied in text books about the wind mills, but they got to see practically during their visit to the temple at Tirumala. "It is quite unimaginable," and with this visit. "We learned a lot about water filtration process and solid waste management. We made lot of discoveries that really surprised us," The students – members of the Eco Clubs functioning at various schools across the district were picked up by the NGC only to expose them to the environmental protection methods and putting to use the non-conventional energy sources. From this we were also made to inculcate a sense of service by drafting them to duties serving the pilgrims at various points. The main objective of the camp was to make every student a responsible citizen and activate the Eco clubs formed at various schools.

Conclusions

Science eco-clubs make a difference. Science eco-club schools are showcases that influence other schools and local communities and by sharing their experiences they transfer environmentally friendly technology to the communities through a community based environmental movement. There are solutions to the major problems of our time; some of them even simple. But they require a radical shift in our perceptions, our thinking, and our values."

(Fritjof Capra, 1996).

Final Findings shows that the science eco-club provides: Self confidence, new life skills, Model for peer groups, Social responsibility.

“Earth has enough for everyone’s need but not enough for even one’s greed”

Mahatma Gandhi

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