



Reflective Practice of Ecological Living in Educational Settings

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ABSTRACT

The aim of this project was to be able to facilitate the development of a ‘green teacher’ who is capable of understanding the most imperative ecological challenges that face us today. It was our endeavour that through sustained reflective practices our student- teachers are able to create innovative activities suited to the emergent ‘ecological’ needs of children in a complex and fast changing world. The emphasis of this research project was to go beyond slogans and use learning from this project to create real points of personal transformation through ‘practicing’ ecological living in life. A series of twelve workshops facilitated this process and helped the teacher to find her own personal philosophical, psychological and sociological poise to dynamize her ‘ecological thinking’. The student-teachers then used this learning to make an intervention in making their college environment and their teaching practice in schools a more dynamic and innovative process. The key outcomes of this research project emphasized that the preparation of a ‘green teacher’ needs to be based on the principle of ‘conscious practice’ in form of concrete realizable goals supported by continuous self-reflection. Further, emphasis on ‘ecological living’ needs to pervade the entire curriculum and can be dynamized by creating a community of involved learners who can sustain the process of inner and outer transformative change.

Keywords: Action Research, Ecological Living, Green Teacher, Green Schools, Reflective Practice

INTRODUCTION

We need to be conscious that we are making the eco-system of our earth more and more fragile each day. This consciousness needs to be developed in teachers and children as part of the educational process so that they can be aware of the finiteness of the natural resources and can replenish and heal the earth. To quote David Orr (7) “It makes far better sense to reshape ourselves to fit a finite planet than to attempt to reshape the planet to fit our infinite wants” (p.9). There is a need for us to develop in harmony with nature and understand much better the synchronous relationship between our *ecology, sociology, psychology and the philosophy of education*. The human psychological desires drive our consumption patterns and the way in

which the social economy is structured. It is our collective psychological desires which drive the way in which we use the ecological resources and drain them continuously. We need an education process that can 'educate our desire' and give us an inner and outer balance which is in harmony with nature.

Environmental Education in the Indian Context

The reverence for nature has always been part of Indian way of living and scriptures, literature, hymns, poems, folklore, traditional wisdom are evidence of the deep connect between human and nature that our ancestors recognised. In the post-independent era, the Gandhian philosophy made its impact on education by introducing basic education scheme where effort was made to link the formal school education to local environmental needs(12). The Kothari Commission (1964-66) called for the inclusion of environmental education in the school curriculum through relevant subjects. The present status of EE in schools can be traced to National Policy of Education (NPE), 1986 (modified in 1992) which emphasised the need to create awareness of environmental concerns by integrating it in the educational process at all stages of education and for all sections of society. It got impetus through a Supreme Court of India's order (1991) to include EE as a compulsory subject at school and college level in response to a Public Interest Litigation (PIL). This was followed by another Supreme Court of India's directive (2003) to NCERT to prepare a module/model syllabus for inclusion of environmental education, as a compulsory subject, at all stages of schooling(3). In consonance with these developments, 'Environmental Studies' was introduced as a subject at the primary level. Understanding of the environment in its totality, both natural and social, and their interactive processes was one of the general objectives of education according to the National Curriculum Framework (2000). Considering the relevance of Environmental Education, the more recent National Curriculum Framework (NCF, 2005) is also aimed at generating among young learners an awareness of and sensitivity to the environment and its problems. It envisages preparing the future custodians of the earth with the essential knowledge of the total environment – natural as well as social – and the problems associated with it. The document also envisions EE to help develop in students -positive attitudes, social values and a strong concern for sustainable development and further improvement of the environment by preparing them to take practical initiative at the individual, the group and the community level. It also suggests that the students learn to appreciate local wisdom through traditions and customs as well as discover their linkages with both national and global concerns(5,6).

Environmental Education has come of its age in India and many organisations, ranging from Government and non-Government organisations like NCERT, Centre for Science and Environment (CSE), New Delhi, Bombay Natural History Survey, Bombay (BNHS), Centre for Environmental Education(CEE), Ahmadabad etc. have been active in promoting EE. The 'Green School Program' initiated by Centre for Science and Environment in New Delhi is one such program that we have used while working on our project(6). Their Green School program is based on 'environmental auditing' done in five areas i.e., water, energy, land, air and waste management in the school. CSE has developed a 'do-it-yourself' hand book on how to audit- water, air, energy, waste, and land, within the school premises. The program is an attempt of putting in practice the concern for nature by 'doing' rather than mere sloganeering.

Rationale for the Study

Through this project our aim is to facilitate the development of future teachers who go beyond the teaching of principles of ‘reduce, reuse and recycle’ from the textbook and can apply these environmental principles dynamically in their own personal lives and teaching. It is indeed true that *lived experience* leads to the best kind of teaching. Student-teachers need to learn and explore deeper symbiotic relationship with nature and transform and create their own personal understanding of ‘ecological living’. The student-teachers also need to reflect and engage with the philosophical aims of education of both western and eastern educational philosophers who have emphasised the crucial role of connection with nature as an integral part of the educational process. It is important that student-teachers to create their own person connect with these educational ideas and attempts to imaginatively translate it into their own teaching in form of communicating an ‘ecological consciousness’ that can infuse their entire process of teaching. This means that environmental education needs to be woven consciously in planning pervade the subject teaching. Student-teachers also need to develop the social sensitivity of their own students regarding the fact that in India most people recycle and reuse objects due to the compulsion of poverty and also as a matter of habit. However, the rise of new middle class has also resulted in rampant consumerism which is eating into the body and soul of our ecology. There is thus a need to engage both with the psycho-spiritual as well as social aspects which form the web of consciousness with which we relate to our environment. The consciousness of a teacher needs to be that of a person who can distinguish between ‘shallow’ and ‘deep’ ecology and can nourish and preserve the entire ‘psychological-spiritual’ and social environment of the learners – the way in which they feel, think, reflect, relate, receive, and give back to their environment. With this rationale, the broad aim and specific *research objectives* were formulated including exploring and locate the principles of ‘ecological living’ within the wider discourse on philosophical aims of education; helping deepen the understanding of ecological issues from a multidisciplinary perspective i.e. psychological, sociological, spiritual and environmental dimensions; enabling the process of continuous reflection and personal transformation of student-teachers through hands-on engagement with progressive alternative practices in sustaining the ecology in personal life, college and school teaching.

METHODOLOGY

Operational definitions

Ecology: ‘Ecology’ is the deeper understanding that both the material and non-material environment is imbued with consciousness and is interdependent.

Ecological Living: Ecological living is the ‘conscious practice’ of being able to use the finite resources in a sustainable manner in everyday life. A sustainable society is that which conducts itself consciously to replenish it for the future generations.

Locale and Sample of the Study

The 10 students involved in this project were students of Bachelor of Elementary Education (B.EL.ED) program. The student-teachers attended a series of workshops in and outside Delhi as a part of the project. They used the insights gained from these workshops to design interventions in their college i.e., Gargi College and the two Government schools in South and Central Delhi in which they did their school internship. School internship program is a 12-week long placement of students in government schools of Delhi at the primary level. They have applied the learning from the workshops in designing and implementing activities that deepen ecological awareness in primary school children. In this project, our students worked with more than 300 students in nine classes from levels I-V.

Research Method

A combination of action research and reflective practice was used as the major research method.

Action Research: Action research provides an understanding of a problematic situation concerning people or procedures. Although typically action research concerns itself with practitioner issues (1), the essence of the action research is a reflective cyclic process which facilitates the understanding of the problem at hand. We are using action research in specific context of exploring the dynamics of transacting EE in primary schools. The action research involves a reflective cycle which starts with an analysis of a specific problem and for a practitioner in education it can involve implementation of a novel pedagogical method or an alternate learning strategy. This analysis leads to the identification and evolution of a relevant, small-scale, systematic intervention aimed at achieving more desirable outcomes. This intervention can then be implemented and monitored using a variety of research procedures. The original intervention is redefined based on the continued observations, analysis, evaluation and reflection of the practitioner (2). We used the action research perspective as primary method which guided our research at all levels. The action research involves *reflective practice* as one of its central component.

Reflective Practice: The process of reflective practice involves an inherent willingness to continuously engage with self-appraisal and self-development. An unreflective teacher is likely to accept the status quo of the existing authority and attempts to find a solution to a problem which has largely been defined by ‘others’. A reflective practitioner on the other hand attempts to cognise a problem originally, and attempts to find the meaning and solutions based on her own experimental and experiential base i.e., on the basis of continuous ‘reflection-in-action’ which enables her to act with foresight in many situations. This is a reflexive process where a teacher is able to see how her values, beliefs and practices are influenced by her own ‘received knowledge’ and is able to question and reexamine values. The novel value and meaning so-constructed is open to critical feedback of colleagues and mentors who extend the practitioner’s understanding by a dialogical process, through a culture of collaborative learning. The reflective practice therefore requires attitudes of open mindedness, responsibility and a wholehearted engagement with the teaching process. The nature of such teaching is a cyclical and spiralling process, through which the practitioner continuously revises, evaluates and evolves new meaning (9). The students in this project engaged with reflexivity by writing their own reflective journals on a regular basis where they

attempted to give meaning to their own experiences and chart out a path for the future planning of activities. This forms a significant database for the present research. The teacher-mentors too were involved in a similar reflexive process while supervising the student teachers' classes and implementing the learning in their own personal lives.

The period of project lasted from December 2014 to March 2015. The project can be divided broadly into *four phases* of data collection and resource preparation:

- a) The preparation of a 'green teacher' through a series of workshops, talks and visits to organizations doing critical work in the area of Environmental Education.
- b) The application of 'ecological living' principles by student-teachers in Gargi College, New Delhi.
- c) The application of 'ecological living' principles by student-teachers in two Government schools of Delhi
- d) Preparation of a compendium titled 'Green Activities for Primary School Children' and an audio-visual educational resource titled 'Listening to the Planet'.

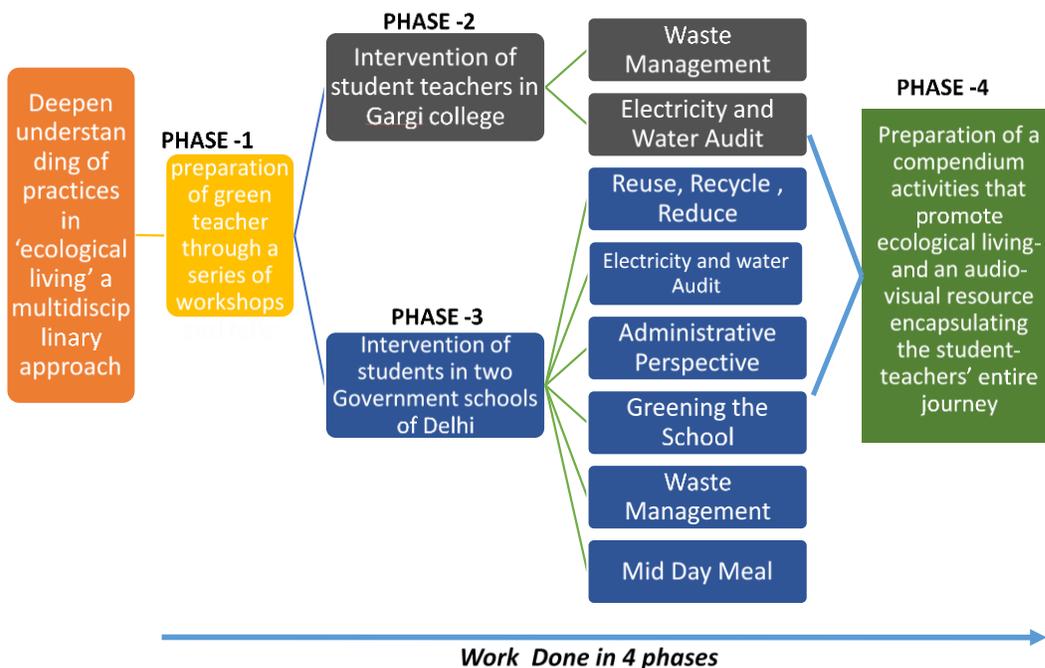


Fig.1: The Four phases of the Project

RESULTS AND DISCUSSION

The aim of this project was to help student-teachers deepen their awareness of ecological living and approach the environmental challenges that we face from multiple perspectives. The key learnings from this research are presented in form of four specific outcomes of the research which span across the key objectives of the research.

Outcome 1: Effective preparation of a 'green teacher' needs to be based on the principle of 'conscious practice' supported by continuous self-reflection.

The innovation that we attempted was the preparation of a 'green teacher' which required that our student-teachers worked on their own consciousness at different levels. This includes deepening of student-teacher's psychological observation of their personal relationship with ecology, understanding and sensitising themselves to the way social habits and demands that were being both created and influenced by market forces and consequently affect the environment adversely. They also attempted to create their own personal and educational philosophical vision of 'ecological living' that could practically be implemented in life and teaching. The student teachers engaged with the workshops conducted as part of the project and attempted to use reflexive thinking to question their own existing beliefs and habits and to consolidate the experiential learning which they found to be specifically relevant to their own context.

The student-teachers in their written reflective logs reported all that they have gained tremendously from these series of workshops/ talks and visits of institutions doing critical work in area of EE. A student who attempted to create her own understanding of 'ecology' and its link with the philosophical aim of education wrote:

“We need to learn how we can use earth's resources in ways that leave the environment healthy for future generations. From all the workshops I attended, I developed an understanding that there was a need in me to develop respect towards living a balanced life. For this balanced life, there needs to be a harmonious relation between individual psychology, society and our environment. Whatever I have learned, I saw it with the perspective of a teacher and how it is related to our education system. In Rabindranath Tagore's (11) essay – 'My School' there is an emphasis that the young mind is born in harmony with the world around it but our school snatches away children from a world full of the mystery of god's own handwork. We need to give students the opportunity to explore their love for nature and environment around them.”

With reference to a deepening of connection with nature, a student reflects:

“Nature, always finds ways to surprise me. I have walked on grass a million times, but, never felt its texture with my feet. Tagore says, “feet are best adapted for intimately knowing the earth by their touch. For the earth has her subtle modulations of contour which she only offers for the kiss of her true lovers, the feet” (11, p.120). It was a treat for the feet to walk on the green grass, slowly, feeling every single strand tickling the stress away. I had also touched a tree before, even climbed on one, but, had never *heard* it. As, a teacher I will use these activities to provide my students the opportunity to experience nature. I will encourage them

to feel it with their being, observe it with their eyes and bridge the gap between the child and nature.”

Outcome 2: Ecological living is based on dynamizing ideas into concrete goals that can be realized and sustained in terms of everyday practice.

The workshops evoked the interest of student teachers to apply the learnings in form of small realizable goals in their own personal lives. They worked on their attitude towards ecological living as well as its practice. With reference to change in attitude, an entry from student-teacher’s reflective log states:

“From the workshop on consumption by Sanjay Prakash I could see how imbalance is created in the ecology because of high rate of consumption and thought of the difference between my real needs and luxuries that I enjoy so that I can fulfil my real needs sustainably and find ways of reducing the luxuries.”

The students-teachers created small bottle gardens and kitchen in their own homes, they examined their electricity and water bills and did an electricity and water audit of their own homes. They tried to see how electrical instruments could be used more economically by being more conscious of the way in which motors, geysers, ACs, and lights and fans were being used at home. Also they became much more conscious of water usage and existing technologies that can be used to save water- e.g., commodes and flush tanks that use only just the amount water required to flush. They also reported using water much more consciously in their personal usage. Many of them adopted the suggestion given to set their ACs at a high temperature of 27 degrees Celsius as it saved the maximum amount of energy and change the bulbs at home to energy efficient bulbs. They tried to find alternatives to using refined sugar and coffee – the two products that are most energy intensive in their production; they thought of walking/ cycling more so that they can reduce pollution and also get the health benefits from this process. Many of them also became much more sensitive to re-using and recycling the old objects to reduce their carbon footprint.

The preparation of a teacher is a *difficult process* for does not lie merely in giving her theoretical concepts which she can mechanically repeat to others. It is just that ‘one drop of practice’ that makes a difference and is key to its sustenance across different contexts.

Outcome 3: Ecological living as a consciousness needs to pervade the entire curriculum of an educational institution.

A critical learning of the present research was the realization by student teachers that ecological living as a vision moves beyond the narrow limits of the teaching of ‘Environmental Studies’. Ecological living as a consciousness needs to pervade the entire curriculum resonating with David Orr’s statement- ‘All education is environmental education’ (8). The student-teachers attempted to integrate ‘ecological living’ as a vision within all subject content and beyond – language, mathematics, environmental studies, art and craft activities, as well as, working on healthy and hygienic food habits during lunch time. They attempted to develop their students’ sensitivity to the ecological challenges around them and create a deep connect with nature. They trained their own students to do the electricity, water and tree audit of the school and discuss the measures that they can personally take to reduce

the electricity and water usage as well do tree planting/creating bottle gardens using old bottles in the school. They also taught their students how to do segregation of waste. Students in schools were asked to create a regular log of the eco-friendly activities that they were doing every day across different subject domains and contexts and note them down. For instance, a student-teacher created an eco-pocket chart with a pocket for each student in her class. The chart was displayed in the classroom and students put small slips in their own pocket whenever they did an eco-friendly activity. After a week all the charts were taken out and students had a class discussion the kinds of progress they had made in keeping their environment clean and healthy in school and at home. This kind of conversion of ecological living theory into practice is what made the entire process very exciting and dynamic in nature. The student teachers also grew with the progress of their own students and shared with their students the excitement of this co-learning process.

Outcome 4: An involved 'community of learners' can help bring critical and transformative change in environmental attitudes and practice.

The student-teachers evolved as a community of learners that were able to listen and learn from each other's experiences. Further, they created a community of learners in their own classrooms. For instance, the consciousness to continuously reuse and recycle was infused in the environment of the classes by the student-teachers. In a particular classroom, the student-teachers asked their students to collect wrappers of different eatables that they were consuming - they learnt language, math and EVS through these wrappers - by reading their content, analysing their nutritional content, looking at their net weight, their date of expiry, etc. The analysis of the nutritional content sensitised the students to what was healthy for them to eat. The wrappers on the charts were changed by students themselves after a few days and a fresh set of wrappers analysed and discussed enthusiastically. The entire class was involved in the project and there was visible excitement and involvement of students in what they were doing.

The students were encouraged as a community to create sensitive relations with plants, collect objects from nature - create beautiful objects from what they had collected, to learn about plants and trees, do bird-watching etc. The aim was that students spend time together outside the confines of a class room, exercise their bodies, deepen their observation of nature and attempt to learn from it. Some of the students interviewed the gardeners to find out what plants could be grown in different seasons and how to take care of them.

The student-teachers observed that the school administration's attitude towards cleanliness drives and other environmental programs that were expected to be a part of the curriculum were largely performed mechanically and failed to enthuse the students. It was felt that the entire school administration needs to become more dynamic in taking leadership for such programmes. Also, the gardeners and the cleaning staff and other members of school administration can be involved in the teaching-learning processes by sharing with students their experiential base and becoming a part of the 'community of learners'. This will benefit and enthuse both the students as well as the school staff who can communicate the dignity of their profession, wisdom and skills to the children. This will make the entire school 'a real 'learning ecology' which is non-hierarchical and where no person is left out of the process of learning. The social values of mutual respect and dignity of labour which students can imbibe from such a curricular change cannot be taught in any lecture that is given in a classroom.

As last, we want to point out that most of the contemporary dialogue on environmentalism or discourse on environmental movements is posited in the bipolar axis of *environment vs. development* debate. Most of the curricular material also transacts issues related to environmental understanding in similar vein. This is a very confrontational and non-negotiable stance. We do not endorse this position. In this context, we feel children's socialisation at various sites of family, neighbourhood, school and media needs to promote a sense of harmony with nature and not be presented as a nature vs. man divide. Seen from the child's perspective, Environmental Studies often triggers a conflict of values in the context of relationship of human beings with nature'(4). For instance, ideas like consumption, degradation, pollution project a negative image of modernisation and progress. It is important that both school science and social studies are rooted in the problem areas of civic life like clean environment, dump sites, landfills, etc. The full scope of EE activities and instructions would enable children to develop acumen for independent and systematic study and socialise children into a culture of concern and a search for collective solutions. This kind of socialisation alone deserves to be counted as a valid objective of EE. The challenge in front of an educationist is to look for solutions in not individual disciplines but at their intersectional points which is only possible through interdisciplinary perspectives.

This approach has the potential of transforming the social order. We are looking for convergence of two major functions of education, i.e., a transformative vision of society without giving up the collective heritage of past. The challenge humbles us.

CONCLUSIONS

The world around us is changing very fast and we need teachers who can continuously evolve and learn about the ever-new challenges that face us every day. We need reflective practitioners in all fields of study and practice who understand the macro- issues that through socio-political-economic forces influence our changing 'ecologies' (e.g., the relationship between environmental degradation, rampant consumerism, economic and educational policies of a government) as well as find ways in which they can begin the change from the 'micro environments'. The famous environmentalist E.F Schumacher (10) gave the maxim of 'small is beautiful'. We therefore need to begin with real purposive change in our micro-environments which is within our immediate control (creating green schools, green neighbourhoods, green organisations, etc).

We need to be able to expand our consciousness through which we can see the harm we are doing to our own self and control the proliferating technologies though our evolving ethics which know when to 'stop' when we have pushed our bodies, minds and souls beyond their natural rhythm. A deep connect with our own needs and the needs of our planet can only save us from *ourselves*. For this, we need to start young- and need 'green teachers' and mentors who can, who have developed their consciousness and sensitivity through reflexivity and deep spiritual contemplation and can 'walk the talk' This would indeed be an innovation (derived from the Latin word *nova* meaning 'new') in the true sense of the word.

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