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Environmental Awareness in Early Grades

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Introduction

Environmental awareness and understanding, sensitisation towards the related issues and concerns to take appropriate action by all citizens for their addressal has emerged as an important concern of the new millennium. The United Nations (UN) has launched a Decade of Education for Sustainable Development (DESD) since 2005 'emphasising that education is an indispensable element for achieving sustainable development'. A curriculum based on the principles of learning of, for and through the environment can play a major role towards accomplishment of the objectives of Education for Sustainable Development (ESD). In India, efforts at the national level reflect the commitment to address this issue as envisaged in the National Policy on Education (NPE) 1986, (modified in 1992) wherein it is clearly mentioned that 'protection of the Environment' is a common core around which National Curriculum Framework (NCF) would be woven. This concern has been taken care of by all the National Curriculum Frameworks for School Education developed subsequent to the NPE and even prior to this by the National Curriculum Committee, in 1975 policy document. At the primary level 'The Curriculum for Ten Year School: A Framework' recommended Environmental Studies(EVS) as a subject that takes into account natural and social environment wherein the textbooks from Classes III to V included separate sections for social science and general science. Continuing with a disciplinary approach to teach EVS at the primary level, the *National Curriculum Framework for Elementary and Secondary Education-1988*, proposed to introduce it in two parts, i.e. EVS I

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and EVS II in Classes III-V. In Classes I and II, it was introduced in integrated form through the use of teachers' handbook since in Classes I or II children are not fully equipped to cope with EVS in a formal way.

Recognising that a child understands his/her environment is in a holistic manner, later NCFSE- 2000, recommended integrated approach for EVS curriculum at the entire primary stage wherein, at Classes III-V, children would be introduced to the environment in its totality with no clear-cut distinction between natural and social environment . In Classes I and II, it was not kept as a curricular area and environmental concerns were addressed through language, mathematics and AHPL. The content at that stage has to be drawn from the immediate environment of the child and it would be integrated with language and mathematics.

NCF-2005 recommends EVS as core curricular area at primary stage. From Classes III to V, EVS is a separate subject while for Classes I and II, EVS is integrated with language and mathematics.

EVS, EE and ESD

A few decades ago, we did not have a subject like EVS in our primary Classes. Till today, most of us, usually, consider it at par with Environmental Education and sometimes interchangeably. Considering environmental education as a way of transforming the education system and its various processes to develop a fresh and concerned perspective towards environment, it is taught through different subjects to promote environmental ethics and inculcate responsibility towards environment. On the other hand, Education for Sustainable Development (ESD) is based on an integrated approach to economic, environmental and societal development, and encompass a broad range of related issues, such as democracy, gender equity and human rights. This broad approach needs to be recognised in both natural and social sciences, and should complement and build on existing initiatives in environmental education. ESD should be grounded in the local economic, social, cultural and ecological context and community followed by regional, national and global contexts and needs to be integrated in all teaching-learning and in all school life.

However, Environmental Studies helps not only in addressing the objectives of ESD but at the same time it helps reduce the curriculum load on children at the primary level as it is envisaged as an integration of science, social science and environmental education. It can be considered as an approach to the learning of environment in its totality without being burdened by any disciplinary considerations. It is an opportunity to let children use their surroundings holistically as a source of information, a ground for learning and a collection of experiences for lifetime instead of segregating into different compartments of natural, social,

cultural, physical environments etc. It includes understanding network of interactive linkages between human beings and their natural as well as socio-cultural environment. It aims at providing an awareness and appreciation of the natural and built environment; understanding of the range of current environmental issues; and the ability to use investigative, critical thinking, and problem-solving skills towards the resolution of environmental issues.

Therefore, limiting it to create awareness or mere knowledge updating through the so-called green textbooks defeats the entire purpose of ESD. Until it leads to transformation of a favourable attitude in order to promote suitable action towards promoting environmental activities, the goal of and overcoming environmental crisis will be distant dream.

Paradigm Shift in NCF-2005

In order to accomplish the desired objectives of EE at all levels of school education , a new paradigm proposed by the position paper on *Habitat and learning* is expected to promote positive environmental actions towards sustainable development to bring about the desired change. There are eight such aspects and each one has been discussed in the context of children in early grades.

Learning rather than teaching– NCF-2005 states that during the early childhood years the child's interest and priorities must direct learning. Children coming to school from diverse backgrounds bring diverse experiences as resources of knowledge that they acquire from an exposure to various means. Their previous experiences must be acknowledged such that the learning experiences must provide scaffolding to the child for constructive interaction with her environment to facilitate the process of assimilation and accommodation chooses appropriate tasks and strategies as per the need of the learners. In other words, an enabling environment for children would be that which is rich in stimulation and experiences and allows them to explore experiment and freely express themselves.

Building capacity for critical thinking and problem-solving– Children between the ages of 4 and 7, are curious by nature and love to explore and raise questions. They learn better through play, trying out different things with their hands and bodies, exploring, experimenting and improvising new things and then making meaning or drawing conclusions based on their previous experiences and learning. In order to nurture their curiosity they need to be engaged in learning situations and be provided opportunities exposing them to have a constructive interaction with their physical and social environment so as to let them explore these through active learning and play based experiences. During the process, they get actively involved through a variety of learning processes namely observing, identifying, inquiring,

estimating, classifying, introspecting, recalling, describing, relating and interacting with their immediate environment and extending it to discover new meanings and relationships by working together in groups. At this age, exposure to such different skills and can create a sound base for the concept formation in different curricular areas at a later stage. Thus, introduction of environmental education through problem-solving, action-oriented approach will help children be empowered to take action on issues that directly affect them. They should not only be made aware but also be provided a variety of tools that they could use to effect change. This approach encourages them to confront real world problems that are within their everyday experience.

Multidisciplinary Approach– Different subjects evolved to help us understand this universe but over the last few years the teaching-learning process of these has deviated from their objectives when it comes to actual practice in the classroom. Teachers teaching a particular discipline think of that particular body of knowledge in isolation and eventually end up transacting it in that manner to their students. In the process, they fail to let their students develop interconnections existing between various subjects, themes and thus the concepts relating that. Environmental Education includes national, social and cultural dimensions, which are very closely related influencing one another. The environmental issues and concerns appear to be quite simple but actually they are very complex and it requires understanding them through knowledge of the basic disciplines. It is all the more important that these issues may not be understood through individual disciplines but through an integrated perspective of their learning.Thus one can say that it is not restricted to only one subject area but requires the appropriate usage of knowledge from all disciplines. Moreover, the multidisciplinary and interdisciplinary aspects of EE become apparent when we promote critical thinking and problem-solving approaches through various learning tasks. Further, till the age of 7 children should not be burdened with the load of different curricular areas, therefore, integrated approach becomes a meaningful tool for teaching in early grades. Also knowing the fact that children look at their environment in a holistic rather than compartmentalised manner and they develop an understanding related to it in holistic and integrated form. This requires breaking the watertight compartments and overcoming the traditional boundaries of disciplines and looking at priority which address essential and common concerns.

Local specificity in the context of global vision – Exposure and constructive interaction with one's surroundings is the best way to learn. The prime objective of learning EVS is to let the child connect with the immediate surroundings. *NCF-2005*

clearly states that children's knowledge should not be limited to the life within the classroom as they grow up in different backgrounds in their social world with varied perceptions and experiences and thus bring a previously acquired set of knowledge base with them while coming to school. In order to develop new learning, it is important to build on their authentic past experiences emphasising active and collaborative learning so to provide concrete experiences that are essential to integrate children's knowledge of their immediate surroundings into school knowledge to let them and their teachers discover and construct knowledge together. Therefore, at the primary level, emphasis should be to provide, scaffolding to the child for constructive interaction with her environment to facilitate the process of assimilation and accommodation for the child to build a mental representation.

Participating with broad involvement of peers and other community members – Since EVS learning primarily occurs outside the walls of the classrooms, Environmental studies forms a bridge between the school environment and that of the environment outside the school. An effort should be made to relate the child's local knowledge to the school knowledge. Children should be encouraged to tap sources other than the textbook and teachers. It is important to consider the elderly, community and the neighbourhood as a rich source of knowledge that also helps in developing a concern and sensitivity towards important issues of equity, diversity and gender. Their access to multiple resources such as newspapers, media and other books makes learning effective as it is crucial to children's thinking. *Knowledge generation* – The focus group report on *Habitat and learning* emphasises understanding different facets of India's environment through documenting student projects on a publicly accessible website, thereby creating a comprehensive database on India's environment. This is possible with children in early stages only when they are constantly given such opportunities right from the pre-primary and primary grades. Exposing children to problems and issues related their surroundings and emphasising on the processes of learning rather than the product can help achieve the desired objectives of EVS.

Empowerment rather than indoctrination – Mere preaching about various issues and problems may not help but empowering children (who are the future citizens) with appropriate awareness, dispositions and skills will enable them to identify and address the problems surrounding their environment. Allowing children to experience such situations, discuss and deliberate on related issued and helping them develop their own understanding will need to their empowerment later.

We know that pre-primary and primary stages are the best to nurture suitable dispositions and skills among

children to enable them identify and be sensitised about the environmental problems and issues prevailing around. Thus, in order to make it meaningful, it needs to begin right from the primary stage (including pre-primary level) making young children the most important target group. However, for its effective transaction, the approaches to its teaching-learning should be as per the developmental needs of the target group.

Recognising these aspects, the National Focus group in *Teaching of science* while not prescribing a textbook for EVS at Classes I and II states that 'the teaching-learning process should be contextualised by her experiences rather than being structured formally. Also a teacher should be free to devise his/her teaching-learning strategies to provide an enabling environment which is rich in stimulation and experiences and that allows children to explore, experiment and freely express themselves relevant'. Endorsing this view the position paper on *Teaching of Social Science* states that 'for Classes I and II, the natural and social environments will be explained as integral part of languages and mathematics.

Hence, it is the need of the hour to emphasise the emotional and attitudinal aspects of a learner's personality along with the requisite cognitive component in order to generate a concern that leads to effective action for conserving and improving the environment and becomes imperative right from the initial stages of learning to inculcate the necessary skills among children to sensitise them towards various environmental concerns. Some of these concerns include - Relationships between natural, social and physical and cultural environment, Conservation (preservation and improvement) of natural resources, culture and heritage and public property, safety, security and health and hygiene of self and others, Equality and justice against issues of human dignity, gender bias, disability, marginalisation and rights and duties of different living organisms, Nurturing creativity and aesthetic sense. These concerns are relevant for all stages of education and young children also cannot be kept oblivious about these where EVS is not a separate subject. As discussed, these can be transacted during the teaching-learning process of language and mathematics in such a manner so as to integrate the skills and concerns of EVS with them. A careful planning and preparation in this regard will lead to an effective implementation of this approach.

Teachers are the key agents for the success of any curriculum related exercise. They generally find difficulty in integrating environmental concerns with these subjects without enhancing their load and go beyond the textbooks. Keeping the environmental concerns in view, if they use a broad array of approaches emphasising experiential learning in child-friendly manner which includes story telling,

picture reading, poems, riddles, worksheets, art and craft activities, puppetry, role play, field visits, interactions, make and do activities, games, narration of experiences to design the learning situations in languages and mathematics for children of early grades, then they would be able to accomplish the objectives of learning EVS and even reduce the load of curriculum on young children.

Learning EVS through Mathematics and Languages

Mathematics is all around us but we as teachers confine its learning to the four walls of the classroom. As mentioned earlier, it is important to acquire knowledge as well as and the necessary skills of learning to learn, which include literacy, numeracy, reasoning , logical thinking and be able to access relevant information so as to apply it meaningfully to solve day-to-day situations. Mathematics learning helps to acquire all these if its teaching-learning relates it to the child's immediate environment and experiences. A careful look reveals that there such close resemblance of the processes of learning EVS and mathematics that one may wonder as to why these two are separate curricular areas. Essentially, it is the content of mathematics which differentiates it from EVS where issues and concerns of environment are central to the curricular area.

Keeping in view, the Early Childhood Education up to the age of eight years, Classes I and II can be considered an extension of the Pre School. Therefore, the concept of pre-numbers has been emphasised a lot in mathematics in these grades. In addition to this children learn about patterns, numbers, measurement, money and data handling.

Teaching EVS through mathematics using an integrated approach will require amalgamation of the concerns of EVS with mathematical concepts. Some examples given below will throw some light on it.

If we talk about *pre-numbers,* one way of doing it would be giving children an idea of small/big, long/short, near/far etc., through pictures or real objects existing in their surroundings. But, if we take it up through or a poem on family members and discuss with them about their families using questions such as:

- How many members are their in your family?
- Who is the tallest member of your family?
- Whose hands and legs are bigger than yours?
- Is your family a big family or a small family?

This will help them compare their physical features such as height, size of other body parts, age etc., and appreciate the differences and similarities in traits of family members thus helping them understand pre-numbers in the context of their family. They can even be asked to observe real objects in their surrounding by taking them out for a visit, and collect some

items of their interest in a bag. They can be encouraged to sit and discuss their find, e.g.

- What did they collect?
- Which out of these is (short/ shorter/shortest, big/bigger/ biggest)?

They may be asked to group these things based on their size, shape, colour, etc.

Games on things big/small, long/ short or inside/outside can be organised. In place of family, one can take up the animals which exist inside/ outside their homes and children can compared or group them into big/ small, thereby introducing pre-numbers in mathematics to the children along with EVS. During the process they get exposure to the processes of observation, comparison, logical thinking, grouping, discussion, etc.

Similarly, under *Patterns* in Mathematics, generally, patterns in numbers are talked about in textbooks but the learning would be enriched and enhanced if children may be familiarised with the patterns existing in the nature around them. For example, patterns existing in the arrangement of leaves in a twig, lines (veins) in different leaves , animals (squirrel, tiger, leopard, etc.) and birds (quills of peacock), fruits (horizontal, vertical sections of apple, orange, etc.), vegetables (horizontal sections of ladyfinger, onion, cucumber, etc.), flowers, wings of butterfly, etc., are some examples of their nature whereas patterns existing in their physical environment example windows, doors, floor, fabrics, etc., are human made. A variety of styles, e.g., riddles on various animals/birds and plants can make the learning quite interesting and joyful. Children can also organise *Rangoli* decoration, *salad* decoration or handkerchief printing while learning patterns. They can also try some dance sequences (*mudras*), drill exercise or a yogic exercise following some pattern. The abstract form of patterns in numbers can be introduced later. Children not only learn the concept of pattern in a joyful manner but they can also relate it to their surroundings. Needless to mention that such an exposure will help them imbibe a variety of skills such as observation, identification, improvisation, discussion besides nurturing art and aesthetics among them.

For concepts such as *time* and *calendar*, different activities of sequencing related to daily routine of self, important events (example festivals) during a month or a year, different seasons and activities related to the school calendar can be taken up. Children can also be asked to enlist/ draw and colour different activities that occur or they perform during day or night. Children can be divided into groups named from Monday to Sunday. Different responsibilities of keeping the school or classroom tidy, switching of fans/lights when not in use, closing the water taps, shutting the windows after school etc., can be assigned to them. Children not only learn the days of a week but also

develop sensitivity towards care of public property. Further, they can be sensitised to work on the issues of wastage and conservation of water and electricity while learning to work in a group. It is important that each of these activities needs to be followed by a meaningful discussion.

We know that environment constitutes the content of different curricular areas including languages. Different chapters developed in any textbook relate to various things from environment. It is common belief that language is only an effective tool for communication and listening, speaking, reading, writing as its important skills. It is equally important at the same time, to understand that minute observation, classification, expression, discussion, questioning, estimation, thinking, memorisation, creativity and problem-solving are some of the skills which are crucial to language learning as well and are nurtured through it, which otherwise are considered to be the dominance other curricular areas especially mathematics and EVS. Language learning includes almost all processes and skills that are related to other disciplines. It is seen that in our day-to-day life, language is a pre-requisite to peep in, inquire and understand other subjects. Thus, development of knowledge, skills and language is needed simultaneously.

In languages, taking up an activity of picture reading requires a picture/ illustration of appropriate size and rich in content to let the children minutely observe, analyse and reflect on it. For example, if we select the picture of the scene of a park (where some children are on swings, others playing different games, some people walking, exercising, chatting etc.), then, raising relevant questions will help to expose children to different skills such as observe, discuss, explain, estimate, analyse, express etc., along with sensitising towards environment .

- What all do you see in this park? (Observation)
- What are children doing in it? (Observation)
- Does it seem to be a morning or an evening scene? Why? (Observation, comparison and critical thing)
- Why are some of the fallen leaves yellow, some are brown and other are green in color? (Critical thinking)
- Have you ever plucked any flowers or leaves of plants? Why did you do so?
- It is right to pluck the flowers or leaves? (sensitivity for environment)
- Why do you think one child is sitting all alone and not playing with other children? (Guessing expressing)
- Do you think all these children go to school? Why? (Guessing, thinking logically).
- What do you think is missing in the picture? Draw it (Analyses, expression).

Similar questions can be framed using the pictures of bus stand, market, school etc. There can be a variety of questions and even children

can be asked to frame questions, thus, using integrated approach to EVS learning without enhancing the load of curriculum.

It can be easily done through other methods such as poem recitation and story narration as well. Children can be encouraged to make their own poems and stories. For this the teacher can provide some clue words. The whole class can be made to sit in a circle with the teacher and she can initiate a story, for example, Seema's mother purchased her a new water bottle and a pencil box. During the break she went out to wash her hands before taking meals. When she came back she found the pencil box missing. Then, each child may be asked to carry the story forward by adding one line. The students may be encouraged to complete the story with the help of children such that each child adds one line to the story. If any child is unable to do so, some clues may be provided to her.

For example,

- What do you think Seema would do?
- Will she ask her mother to purchase a new pencil box for her or not? Why?
- Will she ask her friend or complain to the teacher?

Children may be asked to prepare word webs related to certain themes such as water, classroom etc. Children can speak a number of words related to these (for example, rain, fish, sea tap, bath etc., could be some words). They may then be encouraged to write a poem of four lines using these words and efforts of each child need to be appreciated even if a poem has non-rhyming words. Children can also be encouraged to prepare a portfolio in which they would include information related to self/their family (the teacher can conduct this activity throughout the year). Each child can express his/her likes or dislikes about different things, for example, family members, food, clothes etc. They can also be encouraged to draw or decorate these with pictures. This could be an important source for the teacher to know about her students.

Different local and regional games (e.g. *Hopscotch, Water-Ice, Treasure hunt, Kho-kho, Posham pa, Chinese whisper* etc.) which children play, need to be given a due place in the school curriculum because children not only enjoy these games but also acquire various skills of language and EVS through these that include nurturing their psychomotor skills, the spirit of working, singing and playing together through these activities.

Thus, it is imperative and quite easy to transact languages and mathematics by not limiting the teaching-learning to only textbook and classroom but going beyond these and help children connect and learn through their experiences, daily lives and surroundings. Care may be taken about the level needs, style and especially the contexts of children in early grades while planning and designing any activity to accomplish

the objectives of each curricular area along with integrating EVS skills and concerns as per the vision of *NCF–2005* and Right to Education, 2009.

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