

Environmental Education Prospects in Schools

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Abstract

Environmental education in schools and any kind of educational institutions have a large impact on increasing the behavioural concerns toward the environment and thus can be the required action to turn the tide towards more actions to fight the climate change. An education that allows individuals to explore environmental issues, engage in solving them, and finally take the necessary action to improve the environment is what can revolutionise the education system in schools, especially in India and other developing nations. Initially, environmental education will need to focus on the school going children to take actions in aspects of energy use, water use, recycling, construction materials used, transportation to and fro and also stationary used. With many optimistic about environmental education being a major game changer to prevent climate change, this paper will explore the history of environmental education and its objectives while also highlighting the models followed in Finland and how much it has been successful by citing case studies of Finland. This paper also summarises a survey conducted for a sample of teachers who put forward their views about a cognitive and holistic approach towards environmental education. The paper concludes by enlisting how education on zero waste lifestyles and sustainability can lead the new generation to a more environmentally conserved and secure future.

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Introduction

The world is a place full of innumerable possibilities and infinities. As the world progresses forward to more hi-fi technologies, there seems to be a disregard to the harms that are being inflicted on the environment in this pursuit of development. In this context, the Sustainable Development Goals have become priorities until 2030 and must be worked on through numerous initiatives, one of which is environmental education. Environmental education is a type of holistic process of learning of how the environment functions and to develop a familiarity with the surroundings which will help to secure learnings, abilities, values and also the passion to act on environmental issues.

According to UNESCO,

“Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science but the lifelong interdisciplinary field of study.”

It is a study of the relationships and interdependence between natural and human systems in order to have an in-depth of the world and to know how to take care of it properly so that it can be a better place. Amidst the numerous global problems that the environment is facing and its impact on humans, it is needed that environmental educators prepare students to become critical thinkers, informed decision makers and able communicators. Environmental education will help to achieve environmental literacy which will further help to develop positive attitudes about the environment and develop a sense of empowerment. However, the environmental literacy also depends on the commitment and the motivation that a person develops over the course of attaining environmental education. The literacy will help to foster curiosity and enthusiasm and encourage them to explore and engage in the direct discovery of the world around them.

In order to impart environmental education, the education system needs to go through some major changes and has to focus on Education for Sustainable Development (ESD). The school systems have to integrate the practical learnings into its curriculum and help the students to connect with the environment and develop the necessary skills to conserve and protect it.

The Aim of Environmental Education (EE):

The Tbilisi Declaration of 1977 (UNESCO in collaboration with UNEP) states that

“A basic aim of environmental education is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic, and cultural aspects, and acquire the ~knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving environmental problems, and in the management of the quality of the environment.”

The aim of environmental education is to provide more than just environmental information. At the grass-root level, the aim is to make individuals understand the complex nature of environments and to acquire the knowledge, values and attitudes and skills to participate responsibly in solving social problems.

D. H. Meadows had listed out a few key concepts which are crucial to environmental education. The concepts are food for thought, levels of being, complex systems, population growth and carrying capacity, ecologically sustainable development, socially sustainable development, knowledge, uncertainty, and sacredness. Thus, environmental education aims to educate the students on the above key concepts. It also aims form responsible individual and groups who are ready to take actions on the pertinent issues that the world faces.

It also involves providing information about specific environmental concerns or problems to the general public instead of specific group, religion or community. This helps to involve students in different data-gathering techniques that help them to discuss, analyze, predict and interpret data about environmental issues.

The world has become a global village where there is economic, social, political and ecological interdependence and thus the decisions and activities of the any country and have

international repercussions. So, environmental education aims to develop a sense of responsibility and solidarity among the countries and the regions in order to lay the foundation for a new international order which may help to guarantee the conservation and preservation of the environment.

History of Environmental Education

- 1948: International Union for Conservation of Nature Conference (IUCN), Paris — first use of term ‘Environmental Education’
- 1965: First use of term ‘Environmental Education’ in UK, conference held at Keele University
- 1968: UNESCO Biosphere Conference, Paris
- 1970: IUCN meeting, Nevada, USA, Definition of Environmental Education
- 1972: Human Environment based conference of the UN, Stockholm, Sweden
- 1975: Founding of United Nations Environment Programme (UNEP) and International Environmental Education Programme (IEEP)
- 1975: UNESCO/UNEP international workshop on Environmental Education Belgrade, The Belgrade Chapter
- 1977: UNESCO— First inter-Governmental Conference on Environmental Education, Tbilisi Conference, Tbilisi, USSR
- 1979: National Seminar on Higher Environmental Education, New Delhi, India
- 1980: World Conservation Strategy (IUCN, UNEP, WWF)
- 1987: 1) UNESCO/UNEP Educational Congress on Environmental Education and Training, Tbilisi Plus Ten conference, Moscow
- 2) European Year of Environment
- 3) World Commission on Environment and Development— Our Common future—The Brundtland Report
- 1988: European Resolution on Environmental Education

1990: Publication of National Curriculum Documentation for Environmental Education in England

1991: Publication of 'Caring for the Earth'

1992: 1) UN Conference on Environment and Development - 'The Earth Summit' staged in Rio

2) The Eighth Asian Symposium on Science Education for changing World, at University of Colombo, Sri Lanka

1993: Global Forum on Environmental Educational Education for Sustainable Development, New Delhi, India

1996: Publication of Governmental Strategy for Environmental Education in England

Objectives of Environmental Education (EE):

To implement environmental education, the following objectives need to be heeded:

1. **Awareness:** Awareness is the prime objective of environmental education. The awareness is needed among social groups and individuals to acquire knowledge of pollution and environmental degradation that is being afflicted on the environment due to human activities.
2. **Knowledge:** In terms of knowledge beyond the immediate the immediate environment, the people need to know about the global environmental issues and how the small activities on an individual level affect it.
3. **Attitudes:** The social groups and the individuals need to acquire the right set of values for environmental protection.
4. **Skills and capacity building:** The skills will help to discern and segregate in terms of forms, shape, sounds, touch, habits and habitats and also to draw unbiased inferences and conclusions.
5. **Participation:** This will give social groups and individuals with an opportunity to actively involve at all levels in environmental decision making.

Why is Environmental Education needed?

The World Watch Institute had published a report in the year 2010 called the State of the World Report, in which the Ecological Footprint Indicator, which compares the human actions on the ecology, had shown that humanity then used resources and services of nearly 1.3 Earths. By 2020, the figure has largely increased. So, in the decades ahead, the number of consumers will only rise and this will directly impact the resource base of the world. The treasure trove of the world's resources are already under tremendous pressure and are depleting at a faster rate than ever before due to growing world- population and ever-expanding human wants. According to estimates, the human population will be 9.07 billion by 2050, of which 62 percent will be living in Africa, Southern and Eastern Asia.

These statistics should be the urgent reminder of how human is capable of inflicting damage on nature and why the need is now to take up the opportunities to reverse this process of environmental decline and work for a present and future built on the principles of environmental justice, equity and humane development.

Thus, with respect to these problems, the role of education is critical as it is the cornerstone of a modern society. Education can help to determine the progress of the society and also plan for the future course of the advancement of the world. Therefore, education has to focus on such current environmental crises, and it will no longer suffice to make a person only employment worthy. Education has to capacitate people with values that would help them understand their relationship with the society and environment. Thus, environmental education becomes the need of the hour which will go beyond the mere transfer of information and will be a more holistic process of moulding the students into responsible and informed citizens of tomorrow.

Environmental Education in India

India is a major stakeholder in the world where it accounts for nearly a third of the world's 1.2 billion poor. However, it continues to struggle to provide access to basic public services – clean air, water, food, healthcare, and education for its population. When it comes to education, India gives the right to free education. So according to the terms of the education policies of 1986, the document while recognizing the guidelines for imparting environment education, it emphasizes that, “there is a paramount need to create an environmental consciousness.” The National Council of Educational Research and Training (NCERT) lays emphasis on population, land and its uses, different types of resources and their uses, food and nutrition, pollution and man and nature relationship.

Environmental education at the pre-primary and primary level starts with developing the bases through traditional methods and teaching a child to care about the immediate neighbourhood. At the secondary level, the children are introduced to out-of-school activities, problem solving and community activities related to environmental problems. In this process it also includes giving them inputs on basic environmental factors such as ecology, resource distribution, population dynamics, population balance, and the problems of hunger and starvation.

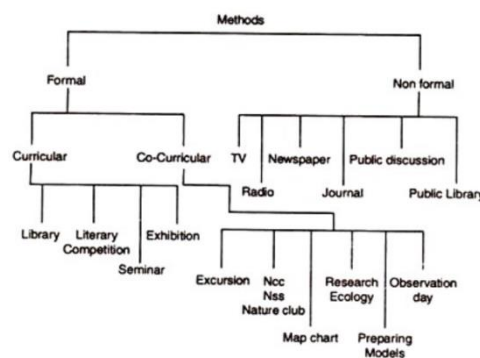


Fig 1. A diagram showing the process of Environmental Education in India

Examples of environmental education in India

1. The Turquoise Change (TTC)

This is an Education for Sustainable Development project that promotes a multi-stakeholder, multi-disciplinary and multi-cultural dialogue and action on advancing sustainable thinking and lifestyles on islands supporting small communities. It was implemented in 2016 and worked in Havelock in Andaman and Nicobar Islands (ANI) and in Zanzibar in its pilot phase from November 2016 – July 2018. There are three approaches under this initiative:

- i. The Whole School Approach
- ii. Training of trainers
- iii. Youth Empowerment

The TTC is aiming to support schools on islands and develop key agents who can create Islands for Sustainability.

2. The Upcycler's Lab

This is working towards a game based approach to teach environment education in city schools. The lab creates board games and using household wastes which also indirectly educate the children about the environment, wildlife and waste management. The games are known to complement Indian environmental studies syllabus. “We focus on consumption and production and we primarily work with these students because they are the ones who are most likely to consume the most. It is a misconception that waste is the responsibility of ragpickers. We teach these students to be responsible for their own waste,” said Amishi Parasrampur, founder of Upcycler's Lab.

Summary of 'Environmental Education in Finland – A Case Study of Environmental Education in Nature Schools' by Eila Jeronen (University of Oulu, Finland), Juha Jeronen (University of Jyväskylä, Finland), Hanna Raustia (University of Oulu, Finland)

Models in Environmental education used in Finland

In Finland, the education in schools are based on more emphasis on the students to build their own understanding and knowledge with the teachers acting as guides to help in that learning process. In case of environmental education, the most widely known and used are the Environmental behaviour model (Hungerford & Volk, 1990), the Onion model (Käpylä, 1995), the Tree model (Palmer, 1998), the House model (Jeronen & Kaikkonen, 2002) and the Model of Education for Sustainable Development (Åhlberg, 2005). All these models are meant for the education of the future. Their main aim is to develop skills and qualifications important for nature conservation, such as sensitivity for the environment, knowledge about nature and ecology, environmentally responsible emotions and values, understanding of environmental questions, critical thinking skills, social action skills, ethical growth, and responsible environmental behaviour (Cantell & Koskinen, 2004). These models have been briefly explained below:

1. Environmental behaviour model:

In this model, Hungerford and Volk (1990) emphasises on three variables which describe the development of an environmentally responsible citizen. The variables are environmental sensitivity, knowledge of ecology, androgyny, and attitudes toward pollution, technology and economy and lastly ownership variables.

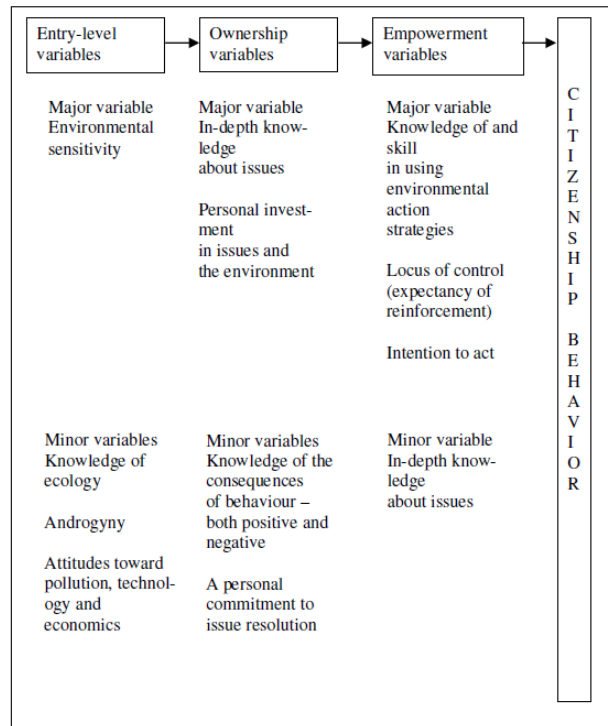


Fig. 2 Environmental Behaviour Model

2. The Onion Model:

This model is based on the first model but according to this, knowing and knowledge are at the core of the model as stated (Käpylä, 1995). The few successful environmental education model strategies include knowing, feeling, willing and, if possible, also action.

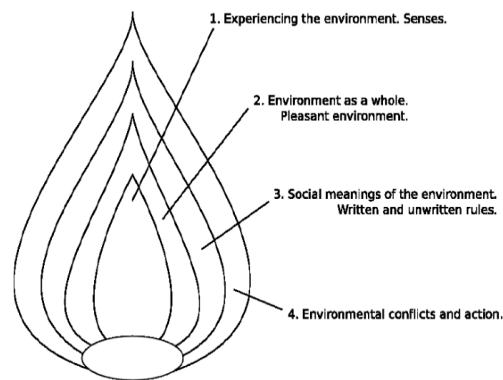


Fig. 3 Onion Model

3. The House Model:

In this model, the development of senses and emotions is considered to be essential for environmental education. The aim is to foster environmental sensitivity and to instill environmental awareness and knowledge in order to develop the sense of responsibility towards solving environmental problems.



Fig. 5 House Model

4. The Tree Model:

This model emphasises that education about the environment, in the environment and for the environment should be interlinked with issue-based, action-oriented and socially critical education.

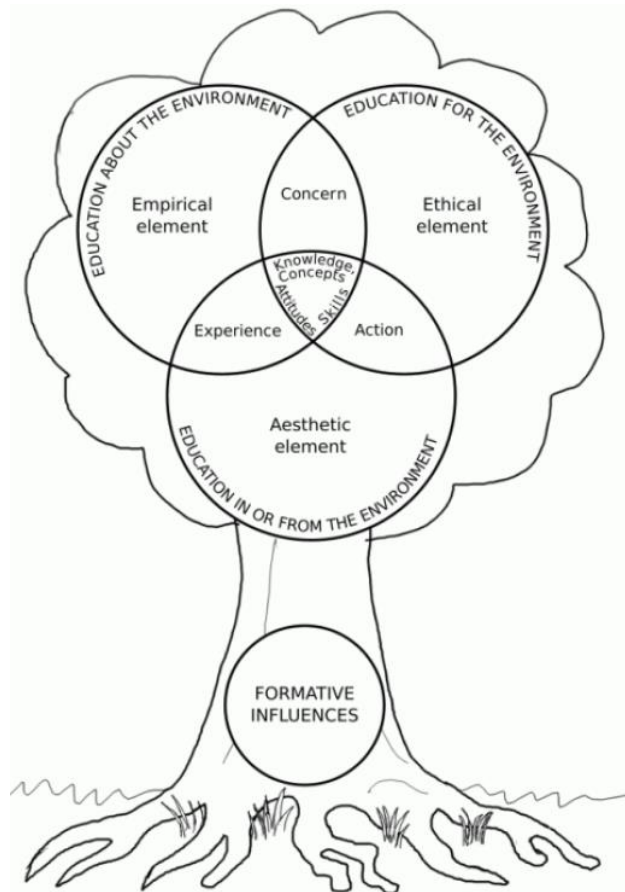


Fig. 4 Tree Model

5. The Model of Education for Sustainable Development:

Based on the UNESCO declaration on ecological, economic and social development, this model focuses on biodiversity, environmental problems and the concept of sustainable development.

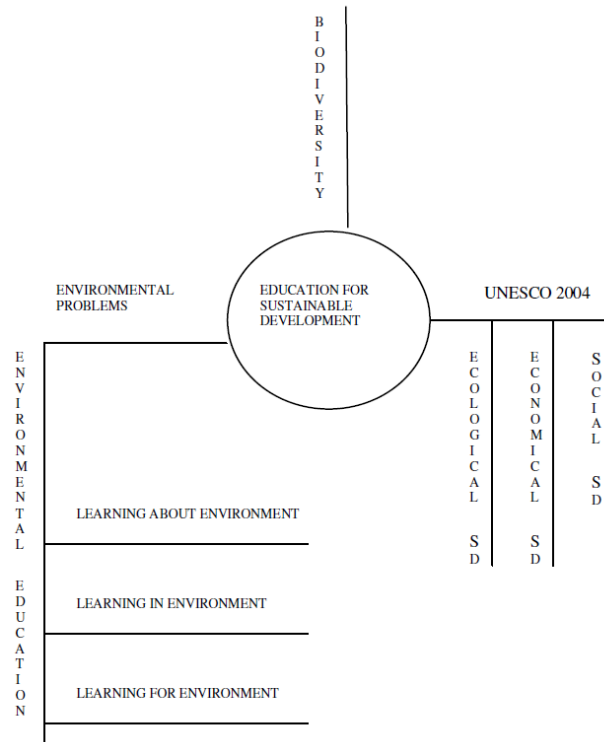


Fig. 6 Model of Education for Sustainable Development

Nature Schools and Environmental schools: a comparison

Criterion	Nature school	Environmental school
Objectives	It develops a sense of responsibility towards environment, strengthens interaction skills; supports the belief that an individual can influence and participate.	It focuses on life-long learning; supports the belief that an individual can participate and influence on the solution of environmental problems.
Target groups	pupils, teachers and educators in early childhood and basic education.	the rising generation and educators.
Main content	Mostly nature and the effects that humans have on the environment	Shows mostly relationships between human beings and environments; local and global environmental problems
Staff	full-time, professional and informed on EE.	full-time, professional

Methods	knowledge-based and experiential action to create positive environmental attitudes; practical action taking into account needs of learners	knowledge-based and experiential action taking into account the needs of learners
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A brief summary of the case study conducted in the Nature Schools in Finland

This study was based on findings from 23 nature schools around Finland and data was collected through a questionnaire that was given to the teacher who was responsible for planning the curricula. The questionnaire had closed questions which were evaluated quantitatively and also open-ended questions which were evaluated qualitatively.

The results which were analysed quantitatively have been shown in the form of bar graphs as follows:

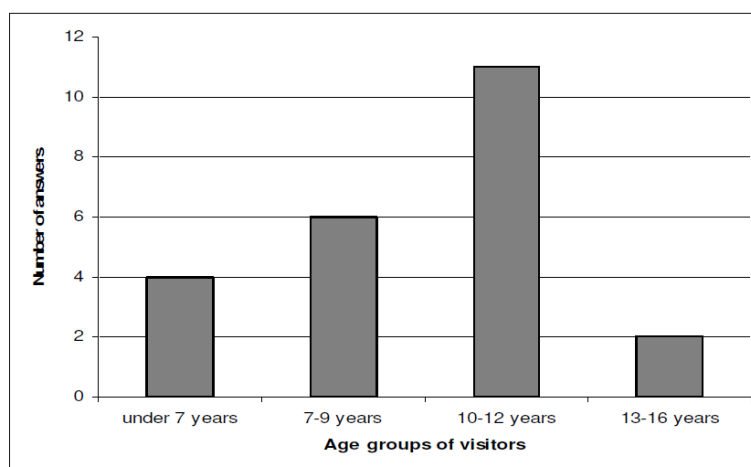


Fig. 7 Bar diagram showing Age group of visitors

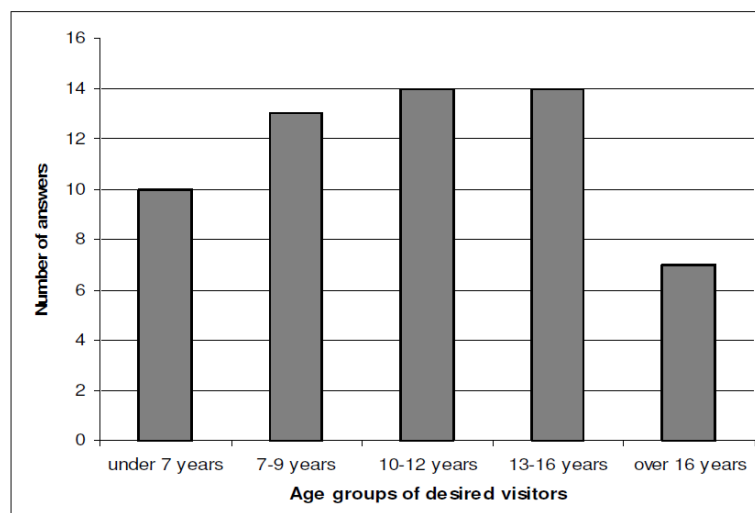


Fig. 8 Bar diagram showing Age group of desired visitors

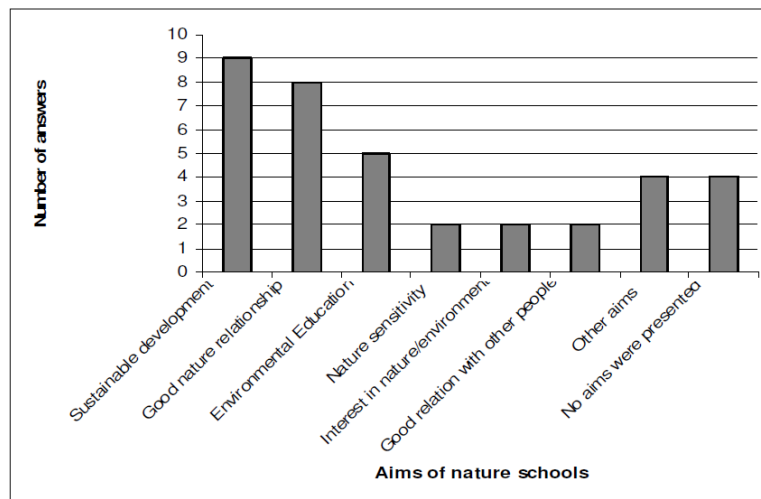


Fig. 9 Bar diagram showing aims of nature schools

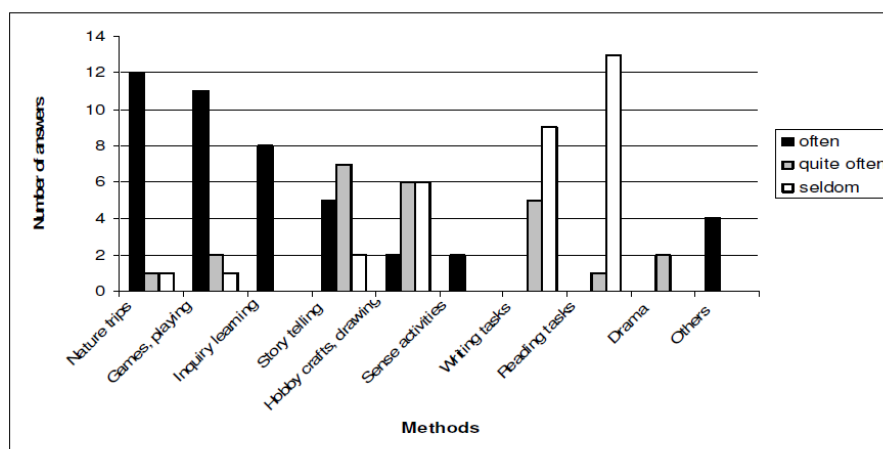


Fig. 10 Histogram showing methods of teaching

This fig. 7 shows the age groups of the desired visitors which are nerly equal for the age groups of 10-12 years and 13-16 years.

The fig. 8 shows that the age group of visitors is mostly under the 10-12 years category which implies that a lot of school-going children have visited the nature and environmental schools.

The fig. 9 shows that the primary of most of the schools surveyed is to teach the concept of sustainable development to the students and also imbibe in them a kind of a cordial and good relationship with the nature.

The fig. 10 shows that nature trips are the most preferred activity to impart the values of environmental education which can further help the students to connect with nature and develop the required qualities.

In conclusion, the Finnish schools were observed to have a curriculum fit for imparting environmental education to children and it did not highlight any way through which adults can be brought into the purview of the same. There seemed to be a gap between the curriculum and the teaching methods that were followed. However, since instilling environmental sensitivity is of prime importance, thus everyone should continuously strive towards achieving this goal of imparting environmental education.

Sample Survey Report

A survey was conducted at a local level in Duliajan, Assam with a sample of 25 teachers who currently follow the prescribed education system in India. The questionnaire for the same was circulated via google forms and the responses were recorded for a combination of closed as well as open-ended questions. The findings from the survey are listed as follows:

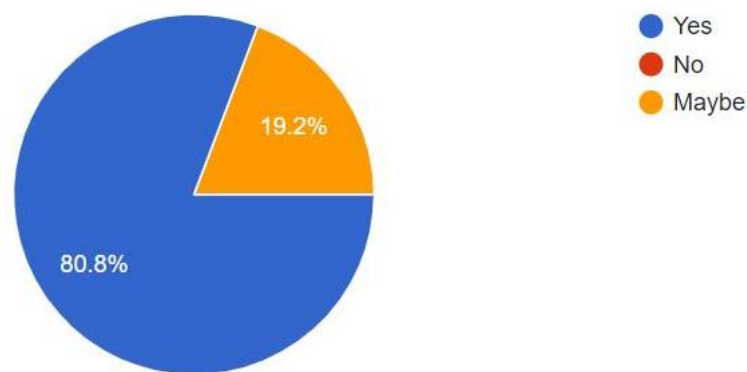


Fig. 11 Pie diagram showing responses to the question: Do you think behavioural change can be expected when students are given environmental education?

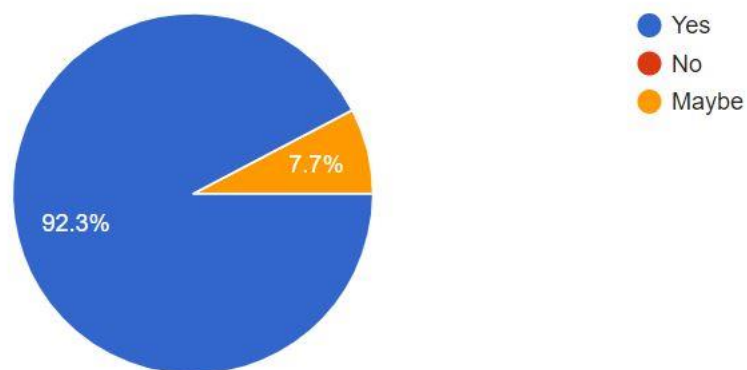


Fig. 12 Pie diagram showing responses to the question: Do you think that students will be able to understand and appreciate the environment through environmental education?

The fig 11 shows 80.8% of the sample population think that behavioural changes can be expected when the students are given environmental education. The fig 12 shows that 92.3% of the sample population are optimistic about students learning to appreciate the environment more through environmental education. Apart from the closed questions, when asked about how environmental education can be imparted in schools, the answers ranged from enacting skits in the classroom to making it an extra-curricular activity which will include field trips, excursions and also doing street plays. Majority of the respondents wanted a more practical and project-based approach to environmental education not only in primary classes but also in the higher ones. Another open-ended question that garnered constructive solutions was that of how environmental education can be made interesting and holistic for the students. The answers included rewarding the best performers of the environment related activities, organizing games that will make the student feel responsible and develop leadership qualities, letting the students explore the immediate environment and helping them notice the changes and also involving them in activities like gardening from the primary classes. Over 96% of the respondents were willing to introduce environmental education as a compulsory subject in the school curriculum.

To conclude, the survey showed that the teaching fraternity are optimistic about the introducing environmental education on a full-fledged basis in Indian schools. Even though there needs to be proper training of the teachers to give them the knowledge of how to impart a holistic environmental education, however there are lots of prospects and benefits of doing so. The New Education Policy 2020, covers a lot of aspects of gaining skill based and practical based education and thus there is hope that it will bring more changes for the better in the education system.

CONCLUSION

Environmental education can be the game changer that was most anticipated in solving the climate crisis. It can help people understand the earth's ability to sustain human and other life. This will help them to take the necessary action and get involved in their community to help sustain the natural resources so that people can create and enjoy a high-quality life for themselves and the future generations. All of this can be achieved through providing a balanced, academically-based environmental education as part of the curriculum. By bridging the gaps between other academic disciplines and environmental study, students can be taught through a more holistic approach. This will help to mould the students into effective, productive, responsible, and environmentally literate 21st century citizens.

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