



## Environmental issues of Bharuch: A Case Study for Creating Environmental Awareness

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### Abstract:

*In the present research work an investigation has been carried out to find out the factors that are responsible for different types of pollution prevalent in Bharuch city. It was also attempted to find out the impact of environmental pollution on the health of the people of Bharuch city. The level of environmental awareness of students, teachers and people of Bharuch city was also found out. The effect of background variables like gender and types of school were also investigated on the level of environmental awareness of students and teachers of secondary schools and people of Bharuch city. Different types of pollution i.e. water pollution, soil pollution, air pollution and noise pollution were found caused by the industries like Oil and Natural Gas Cooperation, Dairy, automobile industries and soil drilling for tube wells and for finding out oil and natural gas from the earth which were found to affect the ecology of Bharuch city. All the types of pollution found to affect the health of people of Bharuch city. The people of Bharuch city were found to be impacted by different types of diseases like bone related diseases, teeth related diseases, skin related diseases and hair related diseases. Male students were found to have higher environmental awareness as compared to the female students. Students and teachers of grant-in-aid schools were found have higher environmental awareness than students and teachers of private schools.*

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**Keywords:** Awareness, Environment, Environmental awareness, Pollution

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### 1. Introduction

Environmental problems have attracted the attention of a wide cross section of people all over the world during the last two decades. People are becoming increasingly conscious of a variety of problems like-global warming, ozone layer depletion, acid rain, famines, droughts, flood, scarcity of fuel, firewood, fodder, pollution of air, and water problems from hazardous chemicals and radiation. The recent increase in industry and urbanization during the last century has brought extensive environmental pollution, pollution problems of the world. The first signs of the pollution problems were observed in water pollution. Later solid water, air, noise and radioactive pollution began to show their effect on human beings. Environment problems pose a challenge to humanity which is unprecedented in its scope and complicity. India like most other countries is fast losing its natural resources reserves to the mounting demands of an ever-increasing population and economic growth. Large stretches of forest are promptly clear felled for developmental schemes, vast tracts of mangroves are mindlessly destroyed for recreational schemes, unsustainable agricultural techniques are readily prompted with little foresight, seas and rivers are turning into cesspools of untreated waste, and, even protected areas like National parks are under constant threat. Human beings and the natural environment are on collision course.

### 2. Rationale and Significance of the Study

Environmental issues have attracted popular attention and it is felt that education has to respond appropriately to this urgent need of the time. In 1986, the National Education Policy was declared. It stated: "There is a paramount need to create a consciousness of the environment. It must permeate all

the ages and all the sections of society, beginning with the child. Environment consciousness should inform teaching in schools and colleges. This aspect will be integrated in the entire educational process.” Accordingly, the National Curriculum for Elementary and Secondary Education: A Framework-1988 presented the NCERT’s view: “The school curriculum should highlight the measures for protection and care of the environment, prevention of pollution and conservation of energy.” Despite the initiatives, it has been felt that although a fair amount of information about the environment is being given through textbooks, it has not succeeded to generate a concern that may lead to effective action for conserving and further improving the environment.

The present research work is dealt with different types of environmental issues of Bharuch city and its effect on everyday life of residents. It would also be helpful not only to investigate the factors that have since long been affecting the eco-system of Bharuch but also to suggest remedial measures and programs to bring awareness among the people of Bharuch to learn the art of living to lead “Environmentally Sustainable” lives.

### **3. Statement of the Problem**

In the present research study the prime focus is to find out different types of environmental issues and its impact on Bharuch city life. Information related to the awareness of environmental issues will also be collected from selected sample through questionnaire and by its analysis the researcher would suggest certain educational –formal as well as informal- programs to enhance environmental awareness among the people of 21<sup>st</sup> century which has been recognized as a Responsive Society. With this point in view the following problem was chosen for the present study: “Environmental Issues of Bharuch city: A Case Study for Creating Environmental Awareness”.

### **4. Objectives of the Study**

- 1.To make The Environmental Awareness Measurement Scales.
- 2.To collect the data of factors affecting the environment of Bharuch.
- 3.To collect the data of environmental awareness among the students, teachers and people of Bharuch.
- 4.To suggest educational implications and programs to create environmental awareness.

### **5. Questions of the Study**

- 1.Which factors are affecting environment of Bharuch city of Gujarat?
- 2.What is the impact of environmental hazard on life of people of Bharuch city?
- 3.What is the level of environmental awareness among the students of Bharuch city?
- 4.What is the level of environmental awareness among the teachers of Bharuch city?
- 5.How can environmental awareness be brought among the people of Bharuch city?

### **6. Hypotheses of the Study**

- H<sub>01</sub>** The level of environmental awareness among the total sample of the students is above average on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being’s Moral Role for Environment Scale, and Environmental Award Scale.
- H<sub>02</sub>** There will not significant difference of the level of environmental awareness between the male students and female students of Bharuch city on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being’s Moral Role for Environment Scale, and Environmental Award Scale.
- H<sub>03</sub>** There will not significantly difference of the level of environmental awareness between the students of private schools and students of grant-in-aid schools of Bharuch city on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being’s Moral Role for Environment Scale and Environmental Award Scale.

- H04** The level of environmental awareness among the total sample of the teachers is above average on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.
- H05** There will not significantly difference of the level of environmental awareness between the male teachers and female teachers of Bharuch city on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.
- H06** There will not significant difference of the level of environmental awareness between the teachers of private schools and teachers of grant-in-aid schools of Bharuch city on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.
- H07** The level of environmental awareness among the total sample of the people of Bharuch city is above average on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale and Environmental Award Scale.
- H08** There will not significantly difference of the level of environmental awareness among students, teachers and people of Bharuch city on total scores of Environmental Law Scale, Special Day and Environment, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

## 7. Variables of the Study

Following variables have been investigated in present research study:

**Table 1. Variables of the Study**

Sr. No.	Types of Variable	Name of Variables Under Investigation
1.	Dependent Variable	<ul style="list-style-type: none"><li>Environmental Issues</li><li>Environmental Awareness</li></ul>
2.	Independent Variables	<ul style="list-style-type: none"><li>Teachers</li><li>Students</li><li>People</li></ul>
3.	Moderate Variables	<ul style="list-style-type: none"><li>Gender</li><li>Type of schools</li></ul>

## 8. Delimitations of the Study

The present research study has been delimited:

- 1.To investigate environmental issues of Bharuch city.
- 2.To study environmental awareness of the students, teachers and people of Bharuch city.
- 3.To suggest the measures to improve environmental degradation by bringing environmental awareness among people of Bharuch city.

## 9. Research Method

Looking to the nature of the present research work, the researcher has employed Descriptive survey method to meet the objectives of the present research problem. Besides descriptive survey method the case study method has also been employed since the study dealt with the environmental problems of Bharuch region.

## 10. Study Area

The study area of the present research study is Bharuch city of Gujarat state.

### **11. Population of the Study**

In the present research study population is comprised of the students, teachers of secondary schools and people Bharuch city which has been chosen as a case for investigation.

### **12. Sample of the Study**

The sample of the present study consisted of 277 students from secondary schools of Bharuch city; 270 teachers from secondary schools of Bharuch city and 148 people having different professions for their livelihood.

### **13. Instrumentation**

For the present research study, the investigators have constructed five different scales to measure environmental awareness among the students, and teachers of secondary schools and people of different areas of Bharuch city mentioned as under:

- 1.Environmental Law Scale.
- 2.Special Day and Environment Scale.
- 3.Human Being's Moral Role for Environment Scale.
- 4.Environmental International Institution Awareness Scale.
- 5.Environmental Award Scale.

Besides using different types of scales, the researcher has also employed a scheduled interview of people of Bharuch city.

### **14. Statistical Tool and Techniques**

In the present research work, statistical formulas like mean, standard deviation, t-values and F-values were used.

### **15. Findings of the Study**

#### ***15.1 Factors affecting environment of Bharuch City***

- The most prevalent type of pollution was found to be water pollution (73 %) in Bharuch city.
- The second most prevalent type of pollution was found to be soil pollution (15 %) in Bharuch city.
- Air pollution (8%) of Bharuch city was the third most prevalent type of pollution
- Noise pollution (4%) was rated as the fourth most prevalent type of pollution.
- Industries (53%) were found to be one of most important causes of environmental problems of Bharuch city.
- Soil drilling (24%) was found to be second most important causes of environmental problems of Bharuch city.
- Urbanization (12%) and population growth (11%) were found to be third and fourth most prevalent causes of environmental pollution in Bharuch city.

#### ***15.2 Impact of environmental hazard on the life of people of Bharuch City***

- Bone related diseases (48%) were found to be the most prevalent among the people of Bharuch city.
- The second most prevalent disease was found to be teeth related disease (33%)
- Hair related diseases (9%) were found to be the third most prevalent disease among the people of Bharuch city.
- Skin related disease (6%) and lung related disease (4%) were found to be the fourth and fifth most prevalent diseases among the people of Bharuch city.

#### ***15.3 The level of environmental awareness among the total sample of students***

- The level of environmental awareness among the total sample of the students was found to be above average on total scores of Environmental Law Scale, Special Day and Environment Scale,

Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.4 Effect of gender on the level of environmental awareness of students***

- Male students were found to be significantly higher ( $5.403 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than female students on total scores of Environmental Law Scale.
- No significant difference between male students and female students was found on the level of environmental awareness on Special Day and Environment Scale, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.5 Effect of types of school on the level of environmental awareness of students***

- Students of Grant-in-aid schools were found to be significantly higher ( $5.402 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than Students of Private schools on total scores of Environmental Law Scale.
- Students of Grant-in-aid schools were found to be significantly higher ( $3.460 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than Students of Private schools on total scores of Special Day and Environment Scale.
- No significant difference between students of Grant-in-aid schools and students of Private Schools was found on the level of environmental awareness on Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.6 The level of environmental awareness among the total sample of teachers***

- The level of environmental awareness among the total sample of the teachers was found to be above average on total scores of Environmental Law Scale, Special Day and Environment Scale, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.7 Effect of gender on the level of environmental awareness of teachers***

- No significant difference between Male Teachers and Female Teachers was found on the level of environmental awareness on total scores of Environmental Law Scale, Special Day and Environment Scale, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.8 Effect of types of school on the level of environmental awareness of teachers***

- Teachers of Grant-in-aid schools were found to be significantly higher ( $4.806 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than Teachers of Private schools on total scores of Environmental Law Scale.
- Teachers of Grant-in-aid schools were found to be significantly higher ( $5.130 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than Teachers of Private schools on total scores of Special Day and Environment Scale.
- Teachers of Grant-in-aid schools were found to be significantly higher ( $2.718 > 2.58$  i.e. .01 level of significance) on the level of environmental awareness than Teachers of Private schools on total scores of Environmental International Institution Awareness Scale.

#### ***15.9 The level of environmental awareness among the total sample of people of Bharuch City***

- The level of environmental awareness among the total sample of the people of Bharuch city was found to be above average on total scores of Environmental Law Scale, Special Day and



Environment Scale, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

#### ***15.10 The difference of environmental awareness among the students, teachers and people of Bharuch City***

- No significant difference between Students, Teachers and People of Bharuch city was found on the level of environmental awareness on total scores of Environmental Law Scale, Special Day and Environment Scale, Environmental International Institution Awareness Scale, Human Being's Moral Role for Environment Scale, and Environmental Award Scale.

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