

Biodiversity Awareness among Secondary School Pupils of Kerala

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Abstract

Biodiversity awareness involves individuals' consciousness about the diversities of living resources within the world, and its associated problems. To a great extent education helps to promote wide spread awareness of the nature and of interaction between man and environment on which he depends. The continuous and close contact with nature enables the students to discriminate and differentiate the uniqueness of diversity present within the living resources. This study actually highlights the need of promoting students' biodiversity awareness of their locality, which certainly will equip the children to handle environmental problems with deeper understanding.

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I. Introduction

Education has a great role in giving orientation to man's outlook on his environment. Education is regarded as an important instrument and means to generate proper awareness and disseminate adequate knowledge and skills regarding protection of environment. Environmental education begins with an understanding of man's relationship with his immediate environment. Environmental education creates an awareness in children of their interdependence with nature and natural resources. Natural resources mainly the living resources or biological diversity act as a life supporting system of the environment.

Developing behavioral repertoires that include environmentally sound practices is an extremely important area of research. In the present educational system, the crunch of space and size of the syllabus were stated to be the major hurdles in bringing the child nearer to nature. To conserve the Earth's vitality and diversity, pupils need to be aware that the choices they make and the actions they take individually and collectively have repercussions for both present and future of our planet. The dawn of the new millennium beckons the entire humanity into an era of unprecedented environmental challenges from the order of the survival of the fittest to the survival of everything to the fittest level. The most pressing one of which is the unprecedented loss of biodiversity on earth. Realizing the widening frontiers and importance of biodiversity make the child conscious of his or her duties and responsibilities to safe guard the environment for today and tomorrow. So, it is necessary to provide education about the environment, education for the environment and education through the environment.

Need and Significance of the Study

Biodiversity is the spectacular variety of life on earth and the essential interdependence of all living things. It refers to astonishing variation in size, structure, physiology and behavior of over three million species of organisms and their living environment. In this way biodiversity represents the very foundation of human existence. By our heedless actions we are eroding this biological capital at an alarming rate. Developing an awareness of biodiversity become the need of the hour to initiate actions for the preservation and conservation of biological wealth. The manifestation of the current biodiversity crisis includes the disappearance of many populations of the survival species, depletion of genetic diversity of crop plants domesticated animals and their unnumerable wild relatives and fragmentation, degradation of several unique habitats and ecosystems. The global problem of biodiversity loss would through our very existence in peril, unless proper and timely remedial actions is initiated in right earnest. Constant touch with nature creates biodiversity awareness among children, will certainly contribute to save the environment. At this, scenario, it is the imperative need to know how far the students are aware about their surrounding living world. Awareness is essential for motivating action to address the proper presentation and conservation of biodiversity.

Through the present educational system gives importance to environmental study, it lacks is the actual contact with environment. This can be corrected through providing opportunities which help the pupil to learn

freely and spontaneously from the nature. Today the students learn more about the global, national and state environmental issues but less about their immediate surrounding nature. Many of the students are not properly aware of the diversities existing among common plants, animals and other living organism within their locality. The investigator hopes that this study will help to know low for the secondary pupils of Kerala are aware about the biodiversity through the present educational practices.

Objectives of the Study

- To find out the biodiversity awareness among secondary school pupils of Kerala.
- To find out whether there exists any significant locality difference in the biodiversity awareness among secondary school pupils of Kerala.
- To find out whether significant gender difference exists in the biodiversity awareness among secondary school pupils of Kerala.

Hypotheses of the Study

1. Secondary school pupils of Kerala differ in their biodiversity awareness.
2. There exists significant locality difference in the biodiversity awareness among secondary school pupils of Kerala.
3. There exists significant gender difference in the biodiversity awareness among secondary school pupils of Kerala.

Methodology of the Study

Methodology deals with the description of sample used for the study, tools and statistical techniques used.

Method

Normative survey method was used for the study.

Variables

The study was designed with criterion variable ‘Biodiversity awareness’. The following variables are treated as classificatory variables.

- ❖ Locale of the sample
- ❖ Gender of the sample

Tool

For the present study, as being a survey study, the investigator used a questionnaire to measure the variable ‘Biodiversity awareness’ among secondary school pupils of Kerala. The questionnaire entitled as ‘Test of Biodiversity Awareness’ developed and standardized by the investigator. Questions prepared on the basis of three levels of biodiversity such as species diversity, genetic diversity and ecosystem diversity.

Sample

Using stratified random sampling technique, the investigator selected appropriate sample for the study. Out of the 14 districts of Kerala, the investigator randomly collected data from 6 districts. For the purpose of administration of the test, the investigator selected two schools from each district by giving equal representation to gender and locality of the sample. The final sample of the study consisted 600 students of standard IX.

Statistical Technique used for the Study

The statistical technique used for the study was test of significance of difference between means of large independent samples of the study.

Data Analysis and Interpretation

I Preliminary Analysis

As the first step of analysis, the investigator has done a preliminary analysis to see whether the variable ‘Biodiversity awareness’ is normally distributed. For this, important statistical constants such as Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis were computed. Summary of the statistical data are presented in the following table.

Table 1
Data and Results of Preliminary Analysis of Biodiversity Awareness

Total Sample	Statistical Constants					
	Mean	Median	Mode	SD	Skewness	Kurtosis
600	21.96	22.00	21	5.05	-.327	-.238

In the preliminary analysis of the data for the variable biodiversity awareness, mean, median and mode were found to be 21.96, 22.00,21 respectively. The standard deviation was found to be 5.05. the value of skewness

and kurtosis were -.327 and -.238 respectively. This suggests that distribution of the variable biodiversity awareness is negatively skewed and the distribution is leptokurtic.

II Comparison of Mean Scores

The data and results of the test of biodiversity awareness for the sample and relevant sub sample is presented in the following table.

Table 2
Data and Results of Biodiversity Awareness for the Total Sample and Sub Samples based on Gender and Locale

Sample Category	N	Mean Score	Standard Deviation
Total Sample	600	21.96	5.39
Boys	300	22.17	5.41
Girls	300	21.75	5.36
Urban Sample	300	20.15	4.71
Rural Sample	300	23.64	5.29

From the above table it is clear that the range of scores for biodiversity awareness test in the present study is between 20.15 and 23.64 i.e., they are getting 53% to 62% scores. The range of mean scores on the biodiversity awareness test indicates that secondary school pupils of Kerala have better level of biodiversity awareness. The results indicated that the mean scores of biodiversity awareness between rural and urban pupils are different. High mean scores on biodiversity awareness are associated with rural pupils. The mean scores between boys and girls shows only slight difference in their biodiversity awareness.

III Test of Significance of Difference between Mean Scores

To compare the distribution of the variable in the relevant sub samples, the data obtained was subjected to the test of significance of difference in means. For the comparison of mean scores of biodiversity awareness among pupils, two tailed test of significance was used by the investigator.

Table 3
Data and Results of Test of Significance of Difference in the Mean Scores of Biodiversity Awareness between Rural and Urban Sample

Sample	N	Mean	SD	Critical Ratio
Rural sample	300	23.64	5.20	8.537
Urban sample	300	20.15	4.71	

Table 3 reveals that the obtained critical ratio 8.537 for the comparison of mean scores of biodiversity awareness between rural and urban sample was found to be significant at 0.01 level. This indicates that there exists significant difference in biodiversity awareness between rural sample and urban sample.

II. Discussion

Rural students may be getting more chances to know about the diversities of biological resources due to the presence of wide varieties of flora and fauna exist in their living habitat. Rural students get more acquaintance with natural diversities through their daily life situations. So, the rural students are very much aware of the importance of biodiversity and the need for conserving biodiversity for maintaining the ecological relationship between man and his environment. Urban areas are dominated by building, markets, roads, shopping complexes etc. Therefore, pupils residing in urban areas in general get biodiversity awareness mainly through indirect sources such as textbook, teachers, friends, mass media, magazines, journals etc. they have less chances for direct acquaintance with natural resources. This may be the result of their low scores in biodiversity awareness test.

Table 4
Data and Results of Test of Significance of Difference in the Mean Scores of Biodiversity Awareness between Boys and Girls

Sample	N	Mean	SD	Critical Ratio
Boys	300	22.17	5.41	
Girls	300	21.75	5.36	1.026

Table 4 reveals that the obtained critical ratio 1.026 is less than the table value 1.96 required for significance at 0.05 level. This indicates that there exists no significant difference between boys and girls in their biodiversity awareness.

III. Discussion

The study was intended to check only the awareness of biodiversity. This awareness can be achieved through natural observation and close contact with nature. To observe nature, the gender of the pupil does not play any significant role. So, it can be concluded that the boys and girls have almost the same level of biodiversity awareness.

Major Findings of the Study

- Mean scores of the total sample and subsample based on gender and locality type revealed that secondary school pupils of Kerala have attained a better level of biodiversity awareness.
- The mean scores of biodiversity awareness of boys were found to be (M=22.17) and those of girls was (M=21.75). This shows that the mean scores of boys were slightly higher than that of girls. But the critical value obtained (t=1.86) indicates that there is no significant difference in biodiversity awareness for boys and girls.
- Rural students show more biodiversity awareness (M=23.64) than that of urban students (M=20.15). The mean scores of rural students were higher than that of urban students. The critical value obtained (t=8.537) showing that the difference was significant at 0.05 level.

Educational Implications of the Study

- ❖ Culture, belief and literacy of the pupil have an influence on their awareness about the local environment. So, environmental instruction must integrate cultural, social, developmental needs as appropriate technologies for the development of environmental awareness.
- ❖ Environmental education involves continued improvement in professional development through in-service and pre-service channels to assist in the development of an environmental ethic. So, proper in-service and pre-service training must be ensured at all levels.
- ❖ Teachers and organizations must focus their efforts on developing better insights and making their students feel, perceive, think and act for the environment. Therefore, it must be ensured that learning can be best nurtured through first hand experiences and activities which foster a deep respect and care for the natural world.
- ❖ Teachers must provide small action-oriented projects, group discussions, seminars, workshops related to natural resources and its conservation with an aim of leading children to observe nature intently.
- ❖ Beyond the classroom activities, the co-curricular activities are also be well utilized for the development of proper awareness to conserve the biological diversity.
- ❖ An inter-disciplinary approach should be adopted by the teachers in terms of drawing on the specific contents of each discipline to make a holistic and balanced perspective about living world around us.

IV. Conclusion

The quality of life depends on the quality of natural resources; therefore, students must be well aware about the importance of biodiversity and its conservation. Education can make man aware, conscious of and knowledgeable about environmental problems. Education can help man to understand the underlying causes, the manifestation and impact of these problems. The present study has certain educational implications in this direction.

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