Environmental Awareness Among Pre-service teachers

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***Abstract*—Environment is a gift of nature and it is a multidimensional and inter disciplinary concept. It consists of air, water, and land which influences all forms of life in one way or other. It is impossible to understand life without studying nature. Environmental awareness is having an understanding of the environment, the impacts of human behavior on it, and the importance of its protection. The three dimensions of consumer environmental awareness were identified as attitude, subjective norms, and perceived behavior control. 'Attitude' reflects an individual's positive or negative evaluation of environmentally friendly behaviors. 'Subjective norms' indicate the social pressures or expectations from family, friends, or society that affect a person's environmental actions. 'Perceived behavioral control' refers to the individual's belief in their ability to perform eco-friendly behaviors, considering available resources and obstacles. Environmental awareness is critical because it can help us to become aware of the impacts on the earth created by human activities leading to global warming, environmental degradation, flood, drought and pollution etc. To compact this problem, we need environmentally sensitive people. The present study was conducted to find out the environmental awareness of Pre-service teachers in Kottayam district. The sample size was 40 B.Ed. students from Kottayam district in Kerala. The result showed that there exists a significant difference in the environmental awareness of B.Ed. students with respected to discipline. Environmental awareness of science students is higher than that of art subject students. The study also showed that there is no significant difference in the environmental awareness with respect to gender and locality.**

***Index Terms*—Environmental awareness, Environmental attitude, social influence, perceived behavior control, Pre-service teachers**

I. INTRODUCTION.

Earth provides enough to satisfy every man's needs but not every man's greed.

Mahatma Gandhi.

We are part and parcel of the environment and depends on it for physical, cognitive, emotional and moral development. Human being have an intense longing for enjoyment and incessant comfort which have led him to the exploitation of nature's bountiful and beautiful wealth.

According the universal encyclopedia, the sum total of all conditions and agencies which affect the development, growth, life and death of an organism, species or race is called environment. The environment for men is called universe. Environment can be:

a) Physical environment which includes food, temperature, climate, home, buildings, temples, schools etc.

b) Biotic environment which includes all living organisms.

c)Social environment which includes family members, teachers, friends, relatives etc.

d)Emotional environment which refers to emotional nature of friends, relatives, teachers, family members etc.

Ecology is the study of an organism in relation with their environment. It deals with the inter relationship between biotic and abiotic components as well as the relationships among the individuals of the biotic components. An ecosystem is an ecological system that is in a state of equilibrium. It is the structural unit of biosphere. It is a geographic area were plants, animals and other organisms as well as weather and land scape work together to form a bubble of life. Environmental awareness refers to an individual's understanding of the natural environment, the effects of human behavior on ecological systems, and the necessity of environmental protection. It encompasses cognitive and affective components that influence how people perceive and respond to environmental issues. According to the Theory of Planned Behavior, environmental awareness can be reflected in three key

dimensions: attitude, subjective norms, and perceived behavioral control, which together help explain environmentally responsible intentions and actions. 'Attitude' describes a person's positive or negative evaluation of pro-environmental behavior, 'subjective norms' represent perceived social expectations, and 'perceived behavioral control' reflects the belief in one's ability to act sustainably. Research has shown that these dimensions significantly shape individuals' pro-environmental intentions and behaviors, highlighting the importance of fostering environmental awareness in educational contexts (Pamuk, S., & Kahriman-Pamuk, 2019). Environmental awareness means the growth and development of awareness, understanding and consciousness towards the biophysical environment and its problem. The world-wide environmental problem is greenhouse effect, risk to ozone layer, acid rain, loss of tropical forest, change in climatology in Artic and Antarctic regions. (Chowdhary,2022).

Importantly, environmental awareness is often seen as the foundation for pro-environmental behavior because it influences how people think and feel about the environment, which in turn shapes their willingness to act sustainably. Studies show that increasing environmental awareness through education and information helps individuals adopt eco-friendly practices and support sustainability goals (Kousar, Afzal, Ahmed, & Bojnec, 2022).

II. NEED AND SIGNIFICANCE OF THE STUDY

In the past several decades due to the economic activities of human being. Earth support system becomes vastly depleted. Our indifference towards environment will have serious implications for our wellbeing. The United Nations conference on environment and development, held in Rio de Janeiro ,1992 known as "Earth Summit" brought the issue of environmental degradation and climate change to the centre stage and high light the reasons for these and called upon world community to take immediate suitable steps (United Nations Conference on Environment and Development [UNCED], 1992). Same warning was given by Johannesburg submit in 2002 (United Nations, 2002). Life on the planet Earth has been possible only because of the environment and it depends on natural resources like forest, water, minerals, food, energy and land. Unfortunately, earth which is used as the reservoir or natures wealth is being losing is resources because of lack of foresightedness on the part of the human being in the name of development industrialization greater production and agricultural extension etc.

If we look into Indian culture, we can see that in Vedas the relationship between environment and man is truly very deep. But now the scenario has changed. Due to rapid industrialization, unplanned urbanization over exploitation of natural resources and over usage of environmentally friendly substances are causing environmental degradation. The major problem of our present world is environmental depletion. The UN World conference on environment at Stockholm in 1972 and activities organized by the international forum showed that the environment is an agenda in international community.

Environmental issues attracted people attention and it was felt that education had to respond to this urgent need of this time. There is a paramount need to create a consciousness of environment it must permeate all sections of the society, beginning with the child. NCF (2005) stress the importance of environmental education at all levels of schooling. In the first inter-governmental conference on environmental education conducted by UNESCO in 1977, Tbilisi, Georgia, USSR worldwide recognition was given for environmental education in teacher education programs. In developing countries most of the environmental problems are caused by the lack of proper education at the very onset. They are to be made aware of health, nutrition, sanitation, hygiene, food and water contamination. Environmental awareness in teacher trainees is crucial because teachers serve as role models and facilitators of sustainable practices for future generations. By developing knowledge, attitudes, and skills related to environmental conservation, teacher trainees can effectively instill eco-conscious values in their students. Integrating environmental awareness into teacher education ensures that schools become a platform for fostering responsible, environmentally literate citizens.

Several studies have examined environmental awareness among B.Ed. students and teacher trainees, revealing mixed findings regarding the influence of demographic and educational factors. A study conducted by Chowdhary (2022) on B.Ed. students in the Kolkata district concluded that there was no significant difference in environmental awareness

with respect to gender, locality, or discipline. Similarly, Arunkumar (2012) reported that teacher trainees in teacher training institutes demonstrated an average level of environmental awareness, which was not strongly influenced by background variables such as gender, locality, or teaching competence. In contrast, Prajapati (2011) found significant differences in environmental awareness among professional students at Varanasi University, with male and female students showing variation in their levels of awareness. Manikandan (2018), in his study on Environmental Awareness of B.Ed. Student Teachers, also reported significant differences in environmental awareness based on several demographic and educational factors, including gender, type of college, residential status, level of study, family type, major subject, and parental education, occupation, and income, while noting no significant differences related to community. Collectively, these studies highlight that environmental awareness among teacher trainees is influenced by a combination of personal, socio-educational, and institutional factors, suggesting the importance of integrating environmental education into teacher training programs to foster sustainable attitudes and behaviors. Hence the investigator decided to find out environmental awareness among pre-service teachers in Kerala especially in Kottayam District.

III. STATEMENT OF THE PROBLEM

The problem is stated as 'Environmental Awareness among Pre-Service Teachers'.

Operational definitions:

1. Environmental awareness-means having an understanding of the environment, the impacts of human being on it, and the importance of its protection.
2. Pre-service Teachers- In the present study, they refer to B.Ed. students pursuing the bachelor of education programme in recognized teacher education institutions, who are undergoing formal training in teaching methodologies, educational psychology, curriculum planning and professional ethics.

IV. OBJECTIVES OF THE STUDY

1. To find out the level of environmental awareness of pre-service teachers.
2. To compare the environmental awareness of pre-service teachers with respected to gender.
3. To compare the environmental awareness of pre-service teachers with respected to locality.
4. To compare the environmental awareness of pre-service teachers with respected to discipline.

V. HYPOTHESIS OF THE STUDY

1. Pre-service teachers have high level of environmental awareness.
2.There is no significant difference in the environmental awareness of male and female pre-service teachers.
3.There is no significant difference in the environmental awareness of pre-service teachers residing in urban and rural areas.
4.There is no significant difference in the environmental awareness of pre-service teachers studying arts and science subjects.

VI. METHODOLOGY

The present study employed the normative survey method to investigate environmental awareness among pre-service teachers. The target population comprised all B.Ed. students enrolled in teacher education colleges of Kottayam district affiliated with M.G. University. A random sample of 40 students was selected for the study. To assess environmental awareness, the study utilized the Environmental Awareness Ability Measure (EAAM) developed by Praveen Kumar Jha (1998). The questionnaire was administered to the participants with clear instructions to ensure accurate responses. The collected data were analyzed using descriptive and inferential statistics.

VII. RESULTS AND DISCUSSIONS

The data were analyzed using mean, standard deviation, and t-test in accordance with the hypotheses.

Level of environmental awareness in B.Ed. students

The dependent variable in this study is environmental awareness. To understand the environmental awareness in students, descriptive statistics was employed. The result of the analysis is given in table 1.

Table 1 Descriptive statistics of Environmental Awareness of Pre Service teachers

Group	N	Mean	Median	Mode	Standard Deviation
B. Ed Students	40	25.5	25.85	25.87	5.2

From the table, the mean score is 25.5, which suggests that the overall level of environmental awareness in the sample is moderate. The median (25.85) and mode (25.87) are closely aligned with the mean, which reflects a near-symmetrical distribution of scores. The standard deviation of 5.2 represents a moderate spread of scores around the mean, implying that while there is some variation in students' awareness levels, their responses do not differ widely from the average.

To understand the level of awareness of B.Ed. student teachers were categorized into high, average, and low awareness groups using the mean(M) and standard deviation (σ), via the normal probability curve method ($M \pm 1\sigma$). Students scoring above $M + 1\sigma$ were classified as having high environmental awareness, those scoring within $M \pm 1\sigma$ were considered to have average awareness, and those scoring below $M - 1\sigma$ were categorized as having low environmental awareness. The result of the analysis is given in the table below

Table 2 *Level of Environmental Awareness in Pre Service Teachers*

Level	N	Percentage (%)	Remarks
Above (M + 1σ)	3	15	High Environmental Awareness
Between (M + 1σ) and M - 1σ)	13	65	Average Environmental Awareness
Below (M - 1σ)	4	20	Low Environmental Awareness

The analysis of environmental awareness scores among B.Ed. students indicates that 15% of the respondents demonstrated above-average awareness, while 20% fell below the average level. The majority, 65% of the students, scored within the average range. These findings suggest that most students possess a moderate level of environmental awareness, with comparatively fewer individuals exhibiting high or low levels. Overall, the distribution of scores reflects a generally satisfactory but improvable awareness status among B.Ed. students.

Environmental Awareness of Pre-Service Teachers Based on Gender

To compare the environmental awareness of male and female pre-service teachers, independent t- test was carried out. The details are presented in Table 3.

Table 3 Comparison of Environmental Awareness of Pre-Service Teachers Based on Gender

Variable	Category	N	Mean(M)	Standard Deviation	t-value	Remarks
Gender	Male	20	25.1	2.18	0.638	Not significant at 0.05 level
	Female	20	25.5	1.76		

The table shows that the calculated t-value (0.638) is much lower than the critical t-value at the 0.05 significance level (1.686). Therefore, the hypothesis stating that there is no significant difference in the environmental awareness of male and female B.Ed. students is accepted at the 0.05 level of significance. That is the male and female pre service teachers do not differ in their environmental awareness.

Environmental Awareness of Pre-Service Teachers Based on Locality

To compare the environmental awareness between pre-service teachers from urban and rural areas, independent t- test was carried out. The results of this analysis are shown in Table 4.

Table 4 Comparison of Environmental Awareness of Pre-Service Teachers Based on Locality

Variable	Category	N	Mean(M)	Standard Deviation	t-value	Remarks
Locality	Rural	20	25	1.61	0.890	Not significant at 0.05 level
	Urban	20	25.7	3.13		

From the table 3, the mean difference between rural and urban B.Ed. students is 0.7, with standard deviations of 1.61 and 3.13 respectively. The calculated t-value (0.890) at the 0.05 significance level is lower than the critical table value. This shows that there is not significant difference in the awareness of B.Ed. students residing in rural and urban areas and the hypothesis is accepted. Therefore, there is no meaningful variation in the environmental awareness of B.Ed. students from rural and urban areas.

Environmental Awareness of Pre-Service Teachers Based on Discipline

To compare the environmental awareness between pre-service teachers from arts and science streams, independent t- test was carried out. The results of this analysis are shown in Table 5.

Table 5 Comparison of Environmental Awareness of Pre-Service Teachers Based on Discipline

Variable	Category	N	Mean(M)	Standard Deviation	t-value	Remarks
Discipline	Science	20	27.25	2.1	5.361	Significant at 0.05 level
	Arts	20	24.8	2.18		

Table 4 shows that the mean difference between B.Ed. students from the science and arts streams is 2.45, with standard deviations of 2.1 and 2.18 respectively. The calculated t-value of 5.361 exceeds the critical t-value of 1.686 at the 0.05 level of significance, indicating a statistically significant difference. Consequently, the hypothesis stating that there is no significant difference in the environmental awareness of pre-service teachers studying arts and science subjects is rejected. This result confirms that there is a significant difference in the environmental awareness of pre-service teachers from the arts and science streams.

VIII. MAJOR FINDINGS OF THE STUDY

The results of the study revealed that B.Ed. students possess a moderate level of environmental awareness, with 65% of the respondents falling within the average range, 15% demonstrating above-average awareness, and 20% scoring below average. This indicates that while most students possess a reasonable understanding of environmental concepts, there remains scope for improvement. The comparison based on gender showed no meaningful difference, suggesting that male and female B.Ed. students exhibit similar levels of environmental awareness. Similarly, no noticeable variation was found between students from rural and urban areas, indicating that geographical location does not significantly influence their awareness. However, a clear difference was observed between students studying in the science and arts streams, with science students showing higher levels of environmental awareness than their arts counterparts. Overall, the findings highlight a moderate level of awareness among B.Ed. students, with differences emerging primarily across academic disciplines rather than gender or locality.

IX. CONCLUSION

The study shows that B.Ed. students possess a moderate level of environmental awareness, with no significant differences based on gender or residential locality, but higher awareness among science students compared to arts students. These findings emphasize the need for targeted educational interventions to

enhance awareness and engagement, particularly among arts students. Contemporary environmental crises, driven by overexploitation of natural resources and unsustainable human-centered development, highlight the gap between environmental knowledge and responsible behavior. Educational programs, while improving cognitive understanding, often fail to foster pro-environmental attitudes and actions. Therefore, systematic environmental education is essential to cultivate awareness, responsible behavior, and sustainable practices, ensuring the well-being of both society and the natural environment.

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