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Environmental Knowledge Prospective Teachers: An Assessment

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Abstract:

The present study has been carried out to know about the level of environmental knowledge among prospective teachers and to find out the difference of environmental knowledge among prospective teachers in respect of gender, residence and stream of study. For this purpose the researcher has used the descriptive survey research design. In this study the population consists of the B. Ed and D. El. Ed college students studying in different colleges (Govt, Govt. Aided and Self Finance) of Paschim Medinipur and Purba Medinipur districts of West Bengal. Out of the population a sample 500 students including male (230) and female (270) were selected by following purposive sampling method for the purpose of the study. To assess the Environmental knowledge of Prospective Teachers, a standardize questionnaire was developed by the researcher with the help of her supervisor that was administered and applied uniformly to different students of above mentioned disciplines. The questionnaire consisted of two parts (i) Demographic Data Sheet, (ii) Knowledge scale of Prospective Teachers about Environment (consists of 50 items). The researcher used both the descriptive statistics and Inferential statistics to analyze the collected data. It has been indicated that environmental knowledge is moderate among the prospective teachers and there is significant difference in the environmental knowledge among prospective teachers in respect of their gender, residence and stream of study.

Keywords: *Environmental, Teacher, Respect Of Gender, Population, Poverty, Based Education.*

Introduction:

The idea of caring for the environment is not a recent idea for Indians, as seen in the writings of rulers, historians, and various inscriptions. In Kautilya's Arthasastra, it is mentioned that the strength of an empire is linked to the health of its surroundings. The term environment refers to the surroundings that impact the evolution and progress of humanity. This environment encompasses every significant aspect of our lives, including the physical, biological, social, and economic. The main necessity of the present time is to educate our population on this crucial aspect. The formalization of education has limited individuals to gain broad knowledge in various fields. The introduction of degree-based education, vocational training, and similar programs has limited the opportunities in education even more. (Aksu and Avcı, 2009). The current education system teaches not only biological and physical sciences, but also social, political, and economic education.These subjects taught nowadays are more conceptual and theoretical rather than realistic and need-based. Population, poverty and pollution are three major problems now facing the country. These three are interlinked with each other thus forming of problem-web (Bamberg, 2003). During the post independence

era, there have been separates policies and programmes to deal with the problems of poverty, over population and environmental protection.

Environmental education involves giving learning opportunities to gain knowledge, skills, and awareness of man's interaction with both natural and manmade environments, including the impacts of population, pollution, resource management, transportation, technology, and urban and rural planning on the overall human environment. Environmental education requires the use of various learning environments and a wide range of educational methods for the teaching and learning process. (Dhanya, & Pankajam, 2017) It will assist students in identifying the signs and root causes of environmental issues, leading to the enhancement of critical thinking and problem-solving abilities. Environmental education should start at preschool and continue through all formal and informal stages, promoting a holistic and balanced view across disciplines. Rewrite the text while maintaining the original input language and word count: (Gupta, 2017)

Objective of the Study:

The present study has been carried out with the following objectives-

I. To know about the level of environmental knowledge among prospective teachers.

II. To find out the difference of environmental knowledge among prospective teachers in respect of gender, residence and stream of study.

Hypothesis:

H01: There will be high level of environmental knowledge among prospective teachers.

H02: There will be significant difference in the environmental knowledge between male and female prospective teachers.

H03: There will be significant difference in the environmental knowledge between Rural and Urban prospective teachers.

H04: There will be significant difference in the environmental knowledge between Science and Arts stream prospective teachers.

Methodology:

Method: In this study the researcher has used the descriptive survey research design.

Population and sample: In this present study the population consists of the B. Ed and D. El. Ed college students studying in different colleges (Govt, Govt. Aided and Self Finance) of Paschim Medinipur and Purba Medinipur districts of West Bengal. Out of the population a sample 500 students including male (230) and female (270) were selected by following purposive sampling method for the purpose of the study

Tools: To assess the Environmental knowledge of Prospective Teachers, a standardize questionnaire was developed by the researcher with the help of her supervisor that was administered and applied uniformly to different students of above mentioned disciplines. The questionnaire consisted of two parts (i) Demographic Data Sheet, (ii) Knowledge scale of Prospective Teachers about Environment (consists of 50 items).

DATA COLLECTION: Information was gathered from the chosen participants through the use of a questionnaire in person. The researcher gathered information from the subjects one by one and provided assistance to address any anomalies in the samples during the data collection process..

Statistical Techniques: For the purpose of the study the researcher used both the descriptive statistics and inferential statistics.

Data Analysis and Interpretation:

Table 1 Descriptive Statistics of the Environmental Knowledge

Parameters	Values
N Valid	500
Missing	00
Mean	50.01
S.E. Mean	.82
Median	246.50
Mode	.
Std Dev	18.41
Variance	338.94
Kurtosis	-.54
Skewness	.20
S.E. Skew	.11
Range	86.00
Minimum	10.00
Maximum	96.00

The data has a mean of 50.01 with a standard deviation of 18.41, indicating a moderate spread. The median is notably higher than the mean, suggesting potential data skewness or outliers. The skewness and kurtosis values suggest a slightly skewed and flatter distribution compared to a normal distribution. Hence it can be concluded that environmental knowledge is moderate among the prospective teachers.

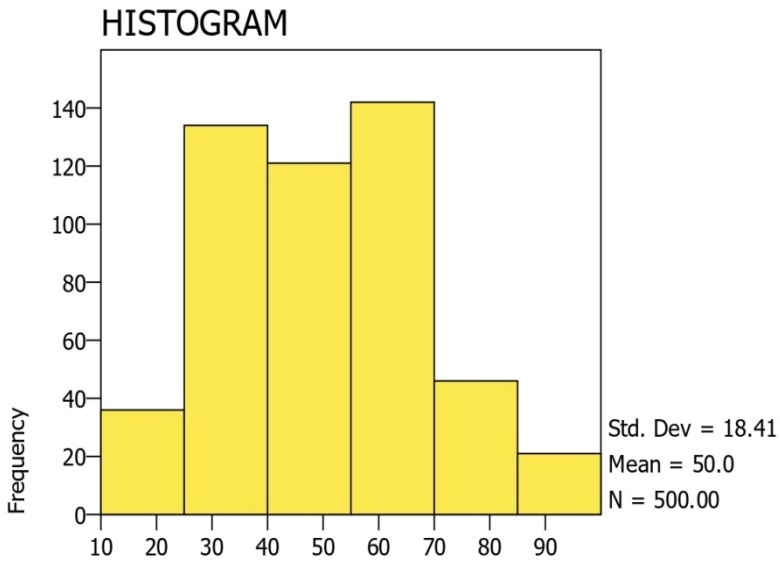

Fig. Showing Frequency Distribution of Environmental Knowledge in the Histogram

Table 2: Difference in the environmental knowledge between male and female prospective teachers

One-Sample Statistics

	N	Mean	Std. Deviation	S. E. Mean
Male	230	50.18	17.91	1.18
Female	270	49.87	18.86	1.15

One-Sample Test

	Test Value=0.05					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Male	42.44	229	.000	50.13	47.80	52.46
Female	43.41	269	.000	49.82	47.56	52.08

The t-value for Males in respect of Environmental Knowledge is 42.44. The t-value for Females in respect of Environmental Knowledge is 43.41. These t-values indicate the difference in means relative to the variability within each group. The degrees of freedom for the Male group is 229. The degrees of freedom for the Female group is 269. Degrees of freedom are related to the sample size and influence the critical value needed for statistical significance. Both p-values are .000, which is less than the significance level of 0.05. This indicates that the differences between the Male and Female groups are statistically significant. The mean difference for Males is 50.13.The mean difference for Females is 49.82. These values represent the average difference between the scores of the two groups. For Males, the confidence interval for the mean difference is 47.80 to 52.46.For Females, the confidence interval is 47.56 to 52.08. These intervals suggest that we are 95% confident that the true mean difference lies within these ranges. Since the p-values for both groups are less than 0.05, you can conclude that there is a statistically significant difference between the Male and Female groups in respect of Environmental Knowledge. The confidence intervals provide a range in which the true mean difference likely falls, reinforcing the conclusion of a significant difference.

Table 3: Difference in the environmental knowledge between Rural and Urban prospective teachers

One-Sample Statistics

	N	Mean	Std. Deviation	S. E. Mean
Rural	232	50.92	17.84	1.17
Urban	268	49.88	18.89	1.15

One-Sample Test

	Test Value=0.05					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Rural	43.43	231	.000	50.87	48.56	53.18
Urban	43.26	267	.000	49.83	47.56	52.10

The t-value for Rural is 43.43. The t-value for Urban is 43.26. These t-values indicate how much the groups' means differ in relation to the variation within each group. The degrees of freedom for the Rural group are 231. The degrees of freedom for the Urban group are 267. Degrees of freedom are related to the sample size and affect the critical value needed to determine statistical significance. Both p-values are .000, which is less than the significance level of 0.05. This indicates that the differences between the Rural and Urban groups are statistically significant. The mean difference for the Rural group is 50.87.The mean difference for the Urban group is 49.83. These values represent the average difference between the scores of the two groups. For the Rural group, the confidence interval for the mean difference is 48.56 to 53.18.For the Urban group, the confidence interval is 47.56 to 52.10. These intervals suggest that we are 95% confident that the true mean difference lies within these ranges. Since the p-values for both groups are less than 0.05, you can conclude that there is a statistically significant difference between the Rural and Urban groups. The confidence intervals provide a range in which the true mean difference likely falls, reinforcing the conclusion of a significant difference.

Table 4: Difference in the environmental knowledge between Science and Arts stream prospective teachers

One-Sample Statistics

	N	Mean	Std. Deviation	S.E. Mean
Science	232	48.89	18.25	1.20
Arts	268	50.74	18.31	1.12

One-Sample Test

	Test Value = 0.05					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Science	40.59	231	.000	48.84	46.47	51.21
Arts	45.41	267	.000	50.69	48.50	52.89

For Science, the t-value in respect of Environmental knowledge is 40.59. For Arts, the t-value is 45.41. These t-values indicate the strength and direction of the difference between the groups relative to the variability in the data. The degrees of freedom for the Science group is 231.The degrees of freedom for the Arts group is 267. Degrees of freedom are related to the sample size and influence the critical value of the t-distribution. Both p-values are .000, which is less than the significance level of 0.05. This indicates that the differences between the groups in respect of Environmental knowledge are statistically significant. The mean difference for Science is 48.84.The mean difference for Arts is 50.69. These values represent the average difference between the scores of the two groups. For Science, the confidence interval for the mean difference is 46.47 to 51.21.For Arts, the confidence interval is 48.50 to 52.89. These intervals suggest that we are 95% confident that the true mean difference lies within these ranges. Since the p-values for both groups are less than 0.05, you can conclude that there is a statistically significant difference between the Science and Arts groups in respect of Environmental knowledge. The confidence intervals provide a range in which the true mean difference likely falls, reinforcing the conclusion of a significant difference. The Arts group appears to have a slightly higher mean difference compared to the Science group.

Findings:

- The differences between the Male and Female groups in respect of Environmental knowledge are statistically significant
- Rural students differ significantly from the urban students in respect of Environmental knowledge
- There is significant difference between Science and Arts students in respect of Environmental knowledge

Conclusion:

The study underscores the importance of equipping prospective teachers with comprehensive environmental knowledge to effectively deliver environmental education in schools. By addressing identified knowledge gaps and improving the integration of environmental education in teacher preparation programs, educators can better prepare future generations to tackle environmental challenges and promote sustainability.

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