



## EXPLORING THE PERCEPTIONS AND PRACTICES OF PRE-SERVICE TEACHERS FOR ENVIRONMENTAL CONSCIOUSNESS IN PUNJAB

*Explorando as percepções e práticas de Professores em treinamento para ensino em consciência ambiental no Punjab*

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### ABSTRACT

Present study aimed to assess the perceptions, beliefs and practices of pre-service teachers regarding environmental consciousness. It followed a survey research design to find out the frequencies/ percentages of the respondents. Accessible population of this research included the pre-service teachers of public sector teacher education universities of Punjab. A sample of 350 respondents was selected using a stratified sampling technique. An adapted questionnaire was used for getting the responses of pre-service teachers regarding their knowledge of environmental consciousness. The study concluded that inclusion of environmental education into syllabus and active role of teachers in environmental protection were the major perceptions of pre-service teachers. Similarly, major beliefs involved consciousness helps students explore relationship between environmental education and social issues, strict actions strict action against organization producing pollution and equal effect of environmental pollution on every individual. Female teachers were more involved in ensuring clean environment as compared to male pre-service teachers. It was recommended that policy makers should focus to include environmental education as an essential part of the curriculum of teacher education programs. Male teachers are required more to improve practices regarding environmental consciousness.

**Keywords:** Practices, Environmental Consciousness, Pre-service teachers, Environmental Education.

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## EXPLORANDO AS PERCEPÇÕES E PRÁTICAS DE PROFESSORES EM TREINAMENTO PARA ENSINO EM CONSCIÊNCIA AMBIENTAL NO PUNJAB

*Exploring the perceptions and practices of pre-service Teachers for environmental conscioussness in Punjab*

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### RESUMO

O presente estudo teve como objetivo avaliar as percepções, crenças ambientais e práticas de candidatos a Professores em relação à consciência ambiental. Seguiu-se um desenho de pesquisa de pesquisa para descobrir as frequências/porcentagens dos entrevistados. A população acessível desta pesquisa incluiu os professores em formação de universidades de formação de professores do setor público de Punjab. Uma amostra de 350 respondentes foi selecionada por meio de uma técnica de amostragem estratificada. Um questionário adaptado foi utilizado para obter as respostas dos professores em formação quanto ao seu conhecimento sobre consciência ambiental. O estudo concluiu que a inclusão da educação ambiental nos currículos e o papel ativo dos professores na proteção ambiental foram as principais percepções dos professores em formação. Da mesma forma, as principais crenças envolvidas na consciência ajudam os alunos a explorar a relação entre educação ambiental e questões sociais, ações estritas, ações estritas contra a organização que produz poluição e efeito igual da poluição ambiental em cada indivíduo. As professoras estavam mais envolvidas em garantir um ambiente limpo em comparação com os professores em formação. Foi recomendado que os formuladores de políticas se concentrassem em incluir a educação ambiental como parte essencial do currículo dos programas de formação de professores. Os professores do sexo masculino são mais obrigados a melhorar as práticas de consciência ambiental.

**Palavras-chave:** Práticas, Consciência Ambiental, Formandos, Educação Ambiental

## INTRODUCTION

Current environmental situation in world and especially in South Asian region highlights the problem environmental education of young generation. Environmental education of 21<sup>st</sup> century focused on future development and encouraging environmental education as basic factor of future changes aiming to achieve sustainability (Vinokurova et al., 2015). There is need that government should commit more for environmental problems and take greater responsibility of environmental deterioration (Sasaoka, 2014).

Today we are facing different environmental challenges like climate change and depletion of natural resource. Environmental challenges are increasing the severe impacts ranging from poor health, livelihood, economic growth and political instability. These changes can affect individuals, their families, communities and even the government. (Hassan, 2018) There is a need that citizens should be environmentally literate. The path to build their environmental literacy is through teacher education programs. Promoters of environmental education mostly targeted pre-service teacher education as a platform for improving environmental literacy (Mandikonza & Lotz-sisitka, 2016).

Declaration on UN conference on Environment at Stockholm 1972 stated that point reached when we have to care about environment not only defending for present but specially for future generations (Durani, 2019). At international conference in Rio-de-Jeneiro in 2012 (Rio+20) it was stated that to achieve sustainability it is essential to practice target oriented development of environmental consciousness (Mandikonza & Lotz-sisitka, 2016).

Now sustainable development is emerged as efforts to balance development and conservation which previously considered as opposing but now as interdependent concepts. To reach sustainable development especially in poor countries environment protection is essential (Durani, 2019). The concept sustainable development multifaceted and includes economic, environment and social activities. However, overall concept is environment protection from damage (Summers et al., 2010).

Education has potential for fostering transformation of society through building people understanding regarding environment and sustainability concerns and providing engagements of people in more sustainable social practices for achieving common concern. Education can help to promote understanding and utilize sustainable practices to promote development activities (Openg, 2012). Education can help in developing following competencies in learners. a) awareness, knowledge and understanding of local and global environment b) attitude and personal lifestyle decisions for resolving the issues c) actions skills for a better environment (McNaughton, 2007).

ESD emerged as new concept to address “Problems of education”. ESD is deep rooted in sustainable development. ESD largely related to characteristics educational inputs rather than outputs (Kalsoom, 2017). Most recently ESD placed at center of 2030 sustainable development agenda and recognized as an enabler of sustainable development as integral element of quality education (Waltner et al., 2019). It was also suggested in studies that for teachers to implement ESD at schools, teachers must take formal training in their teacher education programs (Tomas et al., 2017). Different barriers to achieving ESD include lack of resources, time constraint, overcrowded curriculum, marginalization of education and conceptual misunderstanding of stakeholders. Limited competencies of teachers experience also emerged as constraint (Buchanan & Griffin, 2010).

Teacher education is focused due to these three reasons. First teacher education has key space in ESD. Secondly researcher own experience as teacher. Researcher noticed that pre-service teacher’s knowledge about environmental issues is very limited. Third reason is due to special reforms (like teacher training content) in teacher education in last decade (Kalsoom, 2017). Teachers’ training either pre-service or continuous professional development of teacher / educators is essentially required for ultimate introduction and implementation of environmental education/awareness at school level (Alvarez-Garcia et al., 2015).

Pakistan is placed at top in environmentally vulnerable countries. Rapid population growth and urbanization are main causes of this problem. Depletion of natural resources has threatened the biodiversity. Natural resources and environment of our country is under stress due to over population. These environmental challenges with political and socio-economic issues can further destabilize the Pakistan (Hassan, 2018). The 18<sup>th</sup> constitutional

amendment created uncertainty about environment protection act 1997 now provinces are empowered to legislate for environment (Durani, 2019).

Pakistan has gradually developed framework for environment in light of international guidelines but integration of this in policy and decision making is still not optimized. There are governance gaps related to environment. Mega projects like CPEC has also adverse effects on Pakistani environment. There is a need that government and public pass this development phase with environment protection rather than reaching such goals with unplanned manner (Durani, 2019). Government department need public support for checking impacts of decision making. Public concern for environment is important as shows people concerns about pollution (Hsiao, 2012).

Environmental ethics theorist states that environmental problems cannot be resolved in isolation. They are linked with our modern life style. That's why critique on environment destruction becomes critique on contemporary society (Turner, 2011). So resolution of these environmental problems requires a detailed examination of the society which is producing these problems. Hampel et al. (2015) suggest that for increasing environmentally responsible behavior special attention should be given to the matters of gender identity and environmental attitudes. Women are more environmentally concerned than men.

Mathur and Kumari (2013) proposed three types of environmental attitudes which include egoistic attitude, social altruistic attitude and biospheric attitude. These attitudes regarding environmental problems based on importance that an individual provides. People having high values of affective dimension of environmental consciousness have an altruistic or biosphere attitude engage more in pro-environmental behavior than those having egoistic attitude.

Nikolyukin et al. (2019) provided three approaches for understanding environmental consciousness. These approaches include 1. Anthropocentric approach: based on fact those pragmatic interests of ecological consciousness are in priorities to natural laws. 2. Eco-centric approach: characterized by ecologically oriented meaning and interaction of man & nature. 3. Nature centric approach: prerequisites states man as integral part of nature. In this man and nature is seen as subject of co-development.

According to Nikolyukin et al. (2019) there are different types of environmental consciousness. These types include: 1. Objective-non-pragmatic type based on emotional perceptions. 2. Subjective-non-pragmatic type which is based on cognitive basis. In this man perceive nature subjectively and not pragmatically. 3. Subjective-pragmatic type: this is also based on cognitive basis. Man perceives nature subjectively but in pragmatic way. 4. Objective-pragmatic: is based on practical basis. Nature is considered as an object. This motivation is pragmatic. 5. Subjective –non-pragmatic based on practical basis. In this nature perceived subjectively and interaction is based on ethical standards.

There are different foreign researches available on relevant topics but literature gap exist about environmental consciousness in Pakistani context. This research is a little effort for filling the gap and opening the doors for future research in Pakistani context.

## 1 PROBLEM STATEMENT

A number of studies on sustainable development have been carried out; but this research specifically aims to address environmental dimension of sustainable development. It was intended to explore the extent to which pre-service teachers have knowledge of environmental consciousness. Major objectives of the study involved to assess the perceptions, beliefs and practices of pre-service teachers regarding environmental consciousness.

### 1.1 Research Questions/ Hypotheses

The study was guided with the following research questions:

1. What are the perceptions of pre-service teachers for environmental consciousness?
2. What are the beliefs of pre-service teachers for environmental consciousness?
3. What are the practices of pre-service teachers for environmental consciousness?

Following hypotheses were also tested.

Is there any difference in opinions of pre-service teachers on perceptions, beliefs, and practices of environmental consciousness, based on gender?

## 2 METHODOLOGY

This study followed a survey research design to find out the frequencies/ percentages of the respondents. This design is helpful in collecting data using research questionnaires and analyzing it for verification of research hypotheses. Therefore primary data source for this research was collected through questionnaire responses of research participants.

### 2.1 Population and Sample Selection

Target population was pre-service teachers of teacher education institutions of all over province Punjab. While accessible population of this research included the pre-service teachers of public sector teacher education universities of Punjab.

Quantitative data was collected from pre-service teachers studying in teacher education programs in different universities. There were 217 teacher education institutions across the country. From which 66 teacher education institutions were in Punjab (Tahira et al., 2020). Out of these 66 institutions 62 were public and 4 institutions were under the control of private sector (Shah et al., 2021). Among these 62 institutions there were total 14 public sector universities while remaining were sub campuses and affiliated institutions of these universities. These 14 universities were those which were offering B.Ed. (teacher education programs). Population of this research was limited to province Punjab. There was multistage sampling in which at first stage 66 institutions were arranged in 14 strata's (universities). At the next stage students of B.Ed. programs were selected. Later on equal number (25) of pre-service teachers were selected from each strata for data collection. So in this way, sample of the study consisted 350 pre-service teachers. As it was difficult for the researchers to approach individually for data collection. So here stratified sampling technique was deployed. In this technique of sampling population is divided in different strata's of homogenous characteristics (Fraenkel et al., 2014).

### 2.2 Instrument

A survey questionnaire was prepared by adapting question from selective validated tools of Yavetz, et al, 2009 and Effeney & Davis, 2013 for getting the responses of pre-service teachers regarding their knowledge of environmental consciousness. Questions were asked about perceptions, believes, and practices of environmental consciousness. It consisted three parts. In first part, questions were asked about their thinking. In second part, questions were about their beliefs and questions about their practices were included in the third part.

### 2.3 Data Collection / Analysis

To start data collection, a formal approval was sought the Director, Division of Education, University of Education, Lahore, Pakistan. Afterwards, the researchers visited the education departments of different universities along with permission letters, and research questionnaires. All the pre-service teachers were provided with best guidance to fill in the questionnaires and collection of all distributed questionnaires was ensured by the researchers.

Later on, the collected questionnaires were saved into the computer using SPSS (22.0). Initially, percentages, mean, and standard deviation were calculated to find out the answers to the research questions. Moreover, to test the research hypotheses, inferential stats were used and independent sample t-test deployed. In this way, a meaningful difference in the opinions of male and female teachers on perceptions, believes, and practices of environmental consciousness were calculated.

### 3 RESULTS AND DISCUSSION

#### 3.1 Demographics of the Respondents (Teachers)

According to table 3 given below, 146 respondents belonged to age group of 18-22 years, while 96 of them were from age group of 22-25 years and the 108 respondents were from age group of above 25 years. Therefore, respondents of age group of 18-22 years formed the largest group of population. Similarly, there were 152 male and 198 female respondents who participated in the study. Moreover, 93 respondents were from B.Ed. (1.5) program, and 45 from B.Ed. (2.5) and 212 were studying in B.Ed. (Hons.) program. Hence pre-service teachers of B.Ed. (Hons) formed the largest group of the population.

**Table 1. Demographics of the Pre-Service Teachers**

Demographic	Variables	Frequency
Age	18-22 years	146
	22-25 years	96
	Above 25 years	108
Gender	Male	152
	Female	198
Teacher Education Program	B.Ed.( 1.5)	93
	B.Ed.( 2.5)	45
	B.Ed.(Honors)	212

#### 3.2 Research Question 1. What are the perceptions of pre-service teachers for environmental consciousness?

Table 2 given below presents perceptions of pre-service teachers on environmental conscious. It can be seen that the items 1,2,4,5,7, and 10 have high mean scores of 3.86, 3.81, 3.69, 3.73, 3.77, and 3.84 respectively. Moreover, the items 3,6, 8, and 9 have relatively low mean scores of 1.81, 1.72, 1.76, and 1.83 respectively. It can be concluded that pre-service teachers strongly think that environmental education should be included in teaching, teachers should be involved in improving the environment, teachers should be required to study a course on environmental consciousness during studies, knowledge of environmental consciousness should be given more priority in national curriculum as compared to the present situation, activities related to environmental awareness should be arranged at school level, and environmental consciousness helps students explore relationship between environmental education and social issues.

**Table 2. Perceptions of Pre-Service Teachers on Environmental Consciousness**

Perceptions							
Sr. No.	Items	% of Responses				Mean	SD
		SA	A	DA	SD		
1	Environmental education should be included in teaching.	70	12	10	08	3.86	0.79
2	Teachers should be involved in improving the environment.	68	14	09	09	3.81	0.81
3	Better knowledge about environmental consciousness would help integrating environmental considerations into daily habits.	32	17	27	24	1.81	1.75
4	Pre-service teachers should be required to study a course on environmental consciousness during studies.	72	13	07	08	3.69	0.93

5	Knowledge of environmental consciousness should be given more priority in national curriculum as compared to the present situation.	74	12	08	06	3.73	0.84
6	It is important to include topics on safe environment in the curriculum.	34	14	28	24	1.72	1.81
7	Activities related to environmental awareness should be arranged at school level.	73	11	09	05	3.77	0.86
8	Promoting usage of renewable energy resources at national level is helpful to reduce environmental pollution.	31	15	29	25	1.76	1.68
9	I have been educated sufficiently during my studies to guide students about the safe environment.	28	21	22	29	1.83	1.72
10	Environmental consciousness helps students explore relationship between environmental education and social issues.	77	10	05	08	3.84	0.62

### 3.3 Research Question 2. What are the beliefs of pre-service teachers for environmental consciousness?

Table 3 given below presents beliefs of pre-service teachers on environmental conscious. It can be seen that the items 11,12,14,15,17, and 20 have high mean scores of 3.82, 3.84, 3.89, 3.85, 3.74, and 3.81 respectively. Moreover, the items 13,16, 18, and 19 have relatively low mean scores of 1.63, 1.67, 1.78, and 1.88 respectively. It can be concluded that pre-service teachers strongly believe that environmental consciousness helps students explore relationship between environmental education and social issues, strict actions should be taken against such industrial organizations which are involved in environmental pollution, implementing the laws in true sense helps protecting environment, teachers should focus on guiding the students on safe environment in their teaching, environmental pollution affects every individual on this earth, and environmental sustainability have a positive relationship with curriculum.

**Table 3. Beliefs of Pre-Service Teachers on Environmental Consciousness**

Sr. No	Items	Beliefs				Mean	SD
		SA	A	DA	SD		
11	Environmental consciousness helps students explore relationship between environmental education and social issues.	68	14	12	06	3.82	0.71
12	Strict actions should be taken against such industrial organizations which are involved in environmental pollution.	71	15	04	10	3.84	0.67
13	Every citizen can contribute to improve the quality of environment through personal behavior.	34	13	28	25	1.63	1.84
14	Implementing the laws in true sense helps protecting environment.	75	16	03	06	3.89	0.61
15	Teachers should focus on guiding the students on safe environment in their teaching.	74	14	07	05	3.85	0.69
16	Saving natural resources for future generations is essential.	33	15	30	22	1.67	1.85
17	Environmental pollution affects every individual on this earth.	71	12	08	09	3.74	0.87
18	Education of school students about environment from an early age is very useful.	33	11	30	26	1.78	1.64

19	Teachers can play an effective role in reducing environmental issues through their teaching.	27	19	28	26	1.88	1.71
20	Environmental sustainability has a positive relationship with curriculum.	73	15	07	05	3.81	0.74

### 3.4 Research Question 3. What are the practices of pre-service teachers for environmental consciousness?

Table 3 given below presents perceptions of pre-service teachers on environmental conscious. It can be seen that the items 21,22, and 25 have high mean scores of 3.81, 3.84, and 3.89 respectively. Moreover, the items 23 and 24 , have relatively low mean scores of 1.81 and 1.89 respectively. It can be concluded that pre-service teachers strongly practice that they discuss importance of clean environment to all the concerned, they conserve water, energy and other resources on priority, in daily life, and they will include their knowledge of environmental conscious to educate the students and to make them responsible citizens.

**Table 4. Practices of Pre-Service Teachers on Environmental Consciousness**

Practices							
Sr. No.	Items	% of Responses				Mean	SD
		SA	A	DA	SD		
21	I discuss importance of clean environment to all the concerned.	74	14	06	06	3.81	0.73
22	I conserve water, energy and other resources on priority, in daily life.	71	12	09	08	3.84	0.74
23	I do properly dispose waste materials into trash barrels.	31	16	26	27	1.81	1.68
24	I actively participate in campaigns against environmental pollution.	30	13	29	28	1.89	1.76
25	I will include my knowledge of environmental conscious to educate the students and to make them responsible citizens.	77	13	05	05	3.89	0.71

### 3.5 Research Hypotheses

Is there any difference in opinions of pre-service teachers on perceptions, beliefs, and practices of environmental consciousness, based on gender?

This can be analyzed from the table 5 that male and female pre-service teachers did not have any difference in opinion on perceptions in environmental conscious as there existed a mean difference of 3.34 with t equals to 3.87 at sig. value of .112. Similarly, male and female pre-service teachers did not have any difference in opinion on beliefs in environmental conscious as there existed a mean difference of 3.74 with t equals to 3.94 at sig. value of .089. However, male and female pre-service teachers have a meaningful difference in opinion on practices in environmental conscious as there existed a mean difference of 3.39 with t equals to 4.27 at sig. value of .001.



**Table 5. Differences in opinions on perceptions, beliefs and practices in Environmental Conscious, based on gender**

Environmental Consciousness	Gender	N	Mean	Std. D	Df	M.D	T	Sig
Perceptions	Male	152	22.55	3.19				
					349	3.34	3.87	.112
Beliefs	Female	198	25.89	3.31				
	Male	152	26.12	3.72				
					349	3.74	3.94	.089
Practices	Female	198	29.86	3.26				
	Male	152	21.57	3.65				
					349	3.39	4.27	.001
	Female	198	24.96	3.15				

### 3.6 Discussion

In the present study, perceptions, beliefs and practices on environmental consciousness of pre-service teachers were explored. It was find out that pre-service teachers strongly think that environmental education should be a part of their curriculum, teachers should play a role in improving the environment, national curriculum should be added with more details regarding environmental consciousness, included in teaching, teachers should be involved in improving the environment, and environmental consciousness helps students explore relationship between environmental education and social issues. Moreover, the pre-service teachers believed that environmental consciousness helps students explore relationship between environmental education and social issues, strict actions should be taken against such industrial organizations which are involved in environmental pollution, implementing the laws in true sense helps protecting environment, teachers should focus on guiding the students on safe environment in their teaching, and environmental pollution affects every individual on this earth. Moreover, practices of pre-service teachers in this concern involved that they discuss importance of clean environment to all the concerned, they conserve water, energy and other resources on priority, in daily life, and they will include their knowledge of environmental conscious to educate the students and to make them responsible citizens. A meaningful difference in opinions on practices in environmental conscious was investigated between male and female pre-service teachers.

### CONCLUSION

This study concluded that inclusion of environmental education into syllabus and active role of teachers in environmental protection were the major perceptions of pre-service teachers. Similarly, major beliefs involved consciousness helps students explore relationship between environmental education and social issues, strict actions strict action against organization producing pollution and equal effect of environmental pollution on every individual. Major practices of pre-service teachers were included, discussion of importance of clean environment and conservation of water, energy and other resources. Female teachers were more involved in ensuring clean environment as compared to male pre-service teachers.

This study recommended that policy makers should focus to include environmental education as an essential part of the curriculum of teacher education programs. Moreover, a continuous process of educating the students about clean environment at all levels of education be planned. Awareness regarding clean environment be enhanced among pre-service teachers. They should be encouraged to include their present knowledge of environment education into practice. Male teachers are required more to improve practices regarding environmental consciousness.

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