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Knowledge, Attitude and Behavioral Components of Environmental Literacy: Perceptions of Prospective Teachers for Quality Education in Lahore

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Abstract

Environmental or ecological knowledge means understanding the relationship between living organisms and their environment. The study aimed to analyze the knowledge, attitude, and behavioral components of environmental literacy of prospective teachers for quality education in District Lahore. The objective of this study was to assess the ecological literacy of future teachers in terms of the information, attitudes, and behaviors they possess. The methodology employed in this investigation was a quantitative one. A convenient selection sample of 325 graduate aspiring educators at Lahore's 13 public universities enrolled in teacher education programs was chosen. This investigation made use of two data collection tools. The survey was broken up into two sections. Section A contains fundamental demographic information, while Section B is subdivided into three categories; Environmental Attitudes (EA), Environmental Behaviors (EB), and Environmental Knowledge (EK). This study found that prospective educators have a moderate level of ecological literacy. Male prospective teachers were more literate than their female counterparts, but there was no discernible gender gap in environmental literacy. Future educators do have favorable perspectives and actions toward the environment. No significant gender differences in prospective teachers' attitudes or

actions were discovered. It is suggested that colleges and universities that prepare future educators must include environmental studies.

Keywords: environmental literacy, quality education, environmental knowledge, environmental attitudes, environmental behaviors.

Introduction

Every living thing on Earth must rely on the health of the planet's ecosystem. The ecosystem of the Earth has seen considerable shifts during the previous half-century. Humans have exploited this environment for their benefit, but its repercussions are only now becoming evident (Shaw et al., 2021).

Humanity's impact on the planet's ecosystem has become increasingly clear over the past century. Human interaction with the global ecosystem has resulted in many social, economic, and ecological problems that mankind must now confront (Costanza, 2020). The environmental movement began to gain momentum in the early 1960s. Ecological concerns and issues are multifaceted and global in scope. Major and varied environmental problems include, but are not limited to: alterations in weather patterns and climate change, the destruction of rainforests and the loss of biodiversity, the exhaustion of resources, industrial accidents, the acceleration of land degradation and desertification, disparities in human resources, urban decay, and the dumping of waste, amongst a significant number of other issues. The many dangers to the ecosystem's ability to maintain its integrity present a considerable barrier to human survival. Interest in environmental and consciousness-related issues has grown substantially over the last two centuries (Sipper, 2022).

Deng et al. (2022) state that environmental health is crucial to human survival. Individuals' participation and concern about environmental issues are critical to maintaining a high standard of living. Educators, as they contact their students regularly, are a prime resource for fostering their ecological literacy and, by extension, encouraging their ecologically responsible behavior.

Hadjichambis and Paraskeva-Hadjichambi (2020) argued that the only way to solve environmental problems is to instill a sense of responsibility in our youth. The only way to recognize the deterioration humans have created is to support answerable societies. This involves improving people's understanding and thinking

to raise their awareness of concerns that are related to the environment. A better and safer environment can be achieved through environmental education programs. Since the 1980s, Pakistan, like many other developed and developing countries, has recognized the significance of environmental education (Imran et al., 2021). According to Shutaleva et al. (2020), in Coordinated Environmental Education programs, ecological education principles were introduced from the fifth grade to college in the pattern of studies of the many courses in our national curriculum. A specialized Environmental Education (EE) course will be offered to students in grades nine and ten beginning in 2009, incorporating environmental education topics across the curriculum (Sukma et al., 2020).

Various challenges and obstacles exist in implementing environmental education programs in Pakistani schools. One possible explanation is the scarcity of qualified educators. Because it is the responsibility of the teachers to provide students with the chance to perceive and interpret the health of ecological systems and to connect with those systems, teachers need to have the training and experience necessary to fulfill this responsibility. Environmental education is vital in the classroom (Dobson & Douglas, 2020). The quality of education suffers due to instructors' lack of environmental literacy. Students need more than just an introduction to ecological ideas and environmental problems; they need exposure to a dedicated environmental education program where they can learn how they are expected to work in harmony with nature (Fradila et al., 2021).

However, there is still a severe lack of educators in Pakistan who can successfully integrate environmental topics into existing curricula. Our educators rarely make connections between what they're studying and real-world ecological problems. For this reason, they do not incorporate environmental education into their pedagogy (Darmawan & Dagamac, 2021). There is no doubt that the environmental education program in Pakistan will fail to achieve its set goals. There are not enough ecological education training programs in the country to adequately prepare teachers, even though environmental concepts are taught in their discipline (Hussain et al., 2022). Therefore, assuming that educators naturally know how to integrate environmental education into their curricula is unrealistic. The goals of an environmental education program include helping students recognize and comprehend ecological values and issues, as well as identifying and weighing the merits of various approaches to addressing these issues (Fang et al., 2022).

Häggström and Schmidt (2020) state that environmental education and literacy are inextricably linked. One possible takeaway from this investigation is that participation in environmental education programs can result in individuals having a greater awareness of environmental issues. One of the primary objectives of such programs is to assist individuals in becoming more aware of environmental issues. For someone to be considered environmentally literate, as defined by the North American Association for Environmental Education, they must possess the knowledge, understanding, and skills that will enable them to consciously act in ways that benefit the environment (Clark et al., 2020). According to Kanozia (2020), there is still a significant barrier to safeguarding life in the modern world due to the general population's lack of environmental literacy.

Turner and Wilks (2022), eloquently quoting the relevance of environmental education for teachers and educators, stated that humans genuinely have a responsibility to take care of the welfare of the global ecosystem. Teachers need to be ready for this! It is that easy! Since they pose a direct threat to the survival of humans and other forms of life on Earth, major environmental problems such as global warming and shifting climate patterns can no longer be ignored as they have been in the past. Human activities have led to an exponential increase in the release of greenhouse gases into the atmosphere. As a result, people everywhere—not just in Pakistan—need to learn more about the environment, deepen their understanding of it, and take steps to mitigate the damage that humans have caused. This is possible only by educating people about environmental issues (Reid et al., 2021).

To increase and better everyone's standard of living, humans have used the planet's natural resources without limit. However, this mindset has led to an imbalance that has slowly but steadily begun to threaten life on Earth. These events highlighted the importance of environmental education in classrooms and educational systems worldwide. In recent years, EE (Environmental Education) has been factored into policymakers' deliberations (Murphy et al., 2021).

Statement of the Problem

Pakistan is only one of several countries that has recently begun to pay attention to the inevitability of environmental degradation and shifts in global climate patterns. We must now consider how we relate to the natural world daily. Teachers can play a vital role in raising environmental consciousness because

they likely have more contact with society and students. As a result, this study's objective is to assess future teachers' ecological literacy regarding their information, attitudes, and behaviors. Because they will play a significant role in shaping the future, this study also sheds light on the degree of environmental literacy among the next generation of educators. Therefore, this study assesses prospective teachers' literacies, attitudes, and practices.

Significance of the Study

This research aimed to examine Pakistani educators' perceptions of the importance of environmental literacy. Moreover, we might argue that aspiring educators are the future of the next generation. Supporters of environmental education have long focused on teacher preparation programs to raise students' environmental awareness and knowledge. This research will help universities and curriculum developers determine what aspects of ecological literacy should be emphasized in formal education programs. This research also sheds light on how environmental literacy influences conservation efforts.

This research will help analyze the degree of effectiveness of education in building a feeling of environmental consciousness among individuals. In addition to providing feedback on various facets of education, this research will also assist in providing input into those facets. This study has provided the framework for future research that will help studies focusing on environmental literacy and its critical components in Pakistan.

Objectives of the Study

The objectives of this study are:

1. To evaluate aspiring educators' environmental literacy regarding their theoretical understanding, worldview, and practices.
2. To examine gender differences in prospective teachers' levels of knowledge about some aspects of environmental literacy.

Research Questions

1. Is there any statistically significant difference between future educators on the Attitude and Behavior dimensions of environmental literacy?

2. Is there a statistically significant difference between male and female prospective teachers regarding environmental awareness?
3. Is there a statistically significant difference in the environmental attitude of prospective male and female teachers?
4. Is there a statistically significant difference between the genders in the mean scores on the various measures of contextual behavior regarding environmental behavior?
5. Is there a statistically significant difference between the genders in the mean scores on the various measures of environmental literacy?

Null Hypotheses

1. Statistically, there is no significant difference between future educators on the attitude and behavior dimensions of environmental literacy.
2. Statistically, there is no significant difference between male and female prospective teachers regarding environmental awareness.
3. Statistically, there is no significant difference in the environmental attitude of male and female prospective teachers.
4. There is no statistically significant difference between the genders in the mean scores on the various measures of contextual behavior regarding environmental behavior.
5. There is no statistically significant difference between the genders in the mean scores on the various measures of environmental literacy.

Literature Review

Humans are utterly reliant on and unwittingly shaping their environment by their way of life. However, this fact is primarily disregarded (Everard, 2020). The traditional, restrictive definition of the environment has been expanded, in which all environmental components were recognized and addressed independently. Instead, we take a more comprehensive view of the environment nowadays (Mitrano & Wohlleben, 2020). There are two distinct environments: the unaltered natural and artificial (Khattab et al., 2020).

Despite the abundant literature on the topic, there is still much debate about

what the term "environment" really means. Most people think the environment is still "green," and the term suggests something secondary to its context. Our interdependence with Mother Earth is often disregarded. We are wholly ignored despite our utter reliance on and continual impact on the natural world due to our lifestyle choices (Huneman, 2022).

In the end, it is the environment that determines whether or not humans will survive. The domain must provide certain necessities for people to live healthy lives. After this, the issue of what humans offer in exchange naturally emerges. The moment has come to realize that natural resources are limited. Overpopulation, increased ability to alter and control the environment, and the use of new technology to manipulate and consume resources all contributed to a dramatic decline in environmental quality. Public engagement and care for ecological concerns determine environmental quality. Environmental education is the only means by which both of these goals may be realized. Inadequate educational opportunities are often cited as a cause of ecological concerns (Ardoin et al., 2020).

Two of the most well-attended international conferences on environmental education—the Belgrade Conference and the Tbilisi Conference—discussed its aims and purposes. As stated in the Belgrade Charter, a more environmentally aware and caring global population is the desired outcome of environmental education programs. The ultimate goal of environmental education is to raise a generation that can not only identify and address pressing environmental problems but also plan for and implement sustainable and equitable solutions (Dyasi, 1977). School environment and infrastructure are vital to quality education (Hussain, 2021). There is a need for teacher training on environmental education and its impacts on quality education (Hussain et al., 2022).

One paper examines the current state of environmental education in Pakistani textbooks and curricula. The Situational Analysis Study (SAS) on Environmental Education in Pakistan was sent to the Ministry of Education's Curriculum Wing, the United Nations Development Programme, the Swiss Agency for Development and Cooperation, and the Ministry of the Environment (SDC). According to this research, Pakistan's environmental education programs are based on activity-based curriculums created by ecological and conservation groups in formal and non-formal sectors. A lack of cohesion among these environmental education efforts

meant they had little effect on the National Curriculum, even if they were well-built and well-conceived. Textbooks and outreach educational programs seldom used resource materials created by these groups. To make the present initiatives sustainable, the report recommends expanding them into a full-fledged program. The research examined the current state of environmental education in elementary and secondary school curricula. It concluded that there is little to no preference or trend toward environmental education in national curricula or textbooks. Environmental education is not prioritized in the curriculum's general particular goals, and as a result, the material is also uninspired (Shahid et al., 2005).

To effectively express and promote environmental literacy to their pupils via hands-on experience, effective teaching approaches, and pedagogical abilities, instructors must undergo specialized training in environmental education. The ecological importance of environmental education, which is often neglected in our curricula, might be brought to light by them. With support from the South-Asia Cooperative Environment Program and UNESCO, the Ministry of Education and the Environment and Urban Affairs Division launched a program in 1986 to instill environmental consciousness in students via formal education. A coordinated ecological education program was established to prepare future educators, administrators, policymakers, and planners better (Khanum, 2019). Furthermore, it collaborated with national, regional, and worldwide environmental education organizations, researched curricula, and developed and tested environmental education kits and materials. The initial phase of the Coordinated Environmental Education Programme included many seminars for teachers and revisions to elementary through middle school curricula and texts to emphasize environmental education (Neal & Palmer, 2003).

Environmentally trained instructors play an undeniably crucial role in fostering environmental literacy in their pupils (Tran-Ho et al., 2023). They are the most devoted and enthusiastic about realizing environmental education's potential. By imparting environmental literacy, critical thinking abilities, pro-environmental values, and care, they can better influence our children's attitudes and actions. They instill a sense of civic duty and the need to preserve our natural resources in the pupils. They need to make sure that all children have a fair chance to learn about the environment and that they can understand it in a broad sense that will lead them to a more sustainable and high-quality world (Pancholi et al., 2016).

When the International Environmental Education Program conducted a study on teachers' roles in environmental education, they found that the classroom teacher was a "key" because of his vital role in establishing a successful environmental education program at the school. We hope to see the next generation of environmentally conscious citizens only when educators are well-versed in and dedicated to environmental education (Wilke, 1985).

According to Rauterberg (2022), the environment consists of all the non-living (physical and chemical) and living (biological) variables that affect live organisms, as well as the social factors that determine the form of life on Earth. Suryawati et al. (2020) coined "environmental literacy" about forty-five years ago, but the topic is still hotly debated today. The most widely accepted definition of environmental literacy is the possession of knowledge and comprehension of environmental issues or problems, as well as the ability and drive to take action to address these issues and prevent others from arising (Jannah, 2023). Fang et al. (2020) claim that environmental literacy entails a comprehensive knowledge of the natural world.

Ecological knowledge, environmental issue knowledge, social and political issue knowledge, competencies, environmentally responsible behavior, and cognitive skills are the six core components of Environmental Literacy (EL) (Nurwidodo et al., 2020).

Knowledge, perception, competence, and behavior are the four pillars of environmental literacy (Maurer & Bogner, 2020). Additionally, Garcia (2022) and Masemene (2021) proposed three levels of environmental literacy: nominal environmental literacy (the knowledge and understanding of ecological concepts), functional environmental literacy (the ability to apply that knowledge in a variety of contexts), and environmental behaviors (the ability to actively shape one's actions in a way that benefits the environment so that individuals become responsible and have in-depth understanding for solving ecological problems).

Campaign for Environmental Literacy (2007) outlined the following as components of environmental literacy: awareness (overall impression), knowledge (structured understanding), attitudes (concern and appreciation for the environment), skills (practical application), and actions (development of active participation and engagement and adopting a new behavior) (Harding, 2022).

Theoretical Framework

According to Yuriev et al. (2020) Theory of Planned Behavior, an individual's behavior can be affected by various factors. These factors could influence the individual's activities (e.g., beliefs, individual customs, and perceived behavioral control with a component of intention). According to Petrzelka, people can use their attitudes and subjective norms to form behavioral purposes, which are then used to forecast future actions. It has been shown that the social environment moderates the relationship between environmental attitudes and actions (Langenbach et al., 2020; Tian et al., 2020). Knowledge, attitude, and conduct are examined by McGuire (1989) and linked to persuasion theories. Some theories of persuasion focus on the how (i.e., what someone does with the persuasive information).

In contrast, others focus on the why (i.e., what motivates someone to do anything with the data). Carl Hovland of Yale proposed the attitude change strategy (Spielman et al., 2021). According to proponents of this strategy, influencing people's attitudes requires only tweaking their information. This strategy provides a foundation for comprehending why knowledge must finally be a part of any effort to change or modify behavior. Information-based beliefs can alter or influence attitudes, and attitudes, in turn, influence actions, so this strategy gives a foundation for understanding why knowledge is necessary. Wilson (2023) argues that people's ideas about specific behaviors are constructed through learning. This theory defines how action may be predicted based on individuals' expectations that the consequences will influence them positively or negatively.

Environmental knowledge, attitudes, and responsible environmental behavior are the most critical factors influencing ecological literacy in the reviewed literature (Amoah & Addoah, 2021; Dbab & Azam, 2021). Many studies have found a link between environmental literacy and environmental responsibility, suggesting that enlightened individuals are able to take more action which is grounded in a genuine concern for the planet. It has been discovered by Muñoz-García et al. (2022), Abun (2021), Negash et al. (2021), and Dong (2020) that environmental attitudes and behaviors are interconnected.

Conceptual Framework

Marcinowski and Rehring's (1995) environmental literacy paradigm

included four pillars. However, Kibert (2000) revised this framework in the year 2000. The connection between ecological literacy's knowledge, attitude, and conduct was analyzed using this new framework.

Figure 1

Framework for Environmental Literacy (Kibert, 2000)

Research Design

he methodology employed in this investigation was a quantitative and cross-sectional survey. This perspective was a quick and easy way to know the motivational behavior of teachers. This method was intended to check teachers' knowledge level, behavior, and attitude regarding environmental literacy and the direct and indirect impact on the quality of education.

Population and Sample of the Study

The population of interest in this analysis comprised 1625 graduates at Lahore's public universities who were enrolled in teacher education programs. Researchers employed a multistage sampling strategy for this study. In the first phase, 13 institutions were chosen using purposive sampling, and in the second phase, data were collected using a combination of purposive and convenient selection (Obilor, 2023). The inclusion and exclusion of the institutions were set through prospective teachers whose elective subject was environmental literacy. A sample of 325 aspiring educators was chosen using a convenient selection methodology.

Instruments of the Study

Two tools, appendix-A, and appendix-B, were employed in this investigation. The questionnaires used here were adapted from a Harvard University study; this tool was used to check the teachers' behavior, attitude, and knowledge towards literacy education. This tool was adapted to the Pakistani literacy context and then

used for data collection. The survey was broken up into two sections. Section A contained fundamental demographic information, while Section B was subdivided into Environmental Knowledge (EK), Environmental Attitudes (EA), and Environmental Behaviors (EB) categories, respectively.

Reliability of Instrument

Attitude toward the environment had a Cronbach's alpha of .79, whereas action in that area had a Cronbach's alpha of .87.

Data Collection Procedure

Questionnaires were utilized to compile the information. The researchers visited the specified universities and collected the data after obtaining the necessary permissions.

Data Analysis

Frequencies and percentages were used to get the average score on tests of environmental knowledge.

Mean scores & standard deviation: Mean and standard deviation were used to compile an overall score for the prospective educators' perspective and conduct.

Independent sample t-test: It was utilized to determine whether or not there are significant gender disparities in the environmental literacy subcomponents of candidates for teaching positions.

Interpretations and Results

Table 1

Specifics on the Demographics (Graduates from Enrolled in Teachers Education Programs age-group 18 to 22 years)

Demographics		N	Total
Gender	Female	225	325
	Male	100	

Table 1 shows the demographics of participants enrolled in teachers'

education with elective subjects, such as environmental literacy programs in sampled institutions aged 18 to 22.

Table 2

Standard Deviation and Mean Scores of Future Educators on the Attitude and Behavior Dimensions of Environmental Literacy

EL components	N	M	S. D
Environmental attitude	325.00	3.38	.367
Environmental behavior	325.00	4.08	.365

Table 2 shows the results of the set of questions in Appendix A and Appendix B. The mean value for environmental attitude (Appendix A) was 3.38, and the standard deviation is 0.367, as shown in the table, indicating that prospective teachers have a favorable attitude toward the environment. On the environmental behavior scale, Appendix B shows that future educators have good behavior toward the environment; the mean score was 4.08, the standard deviation was 0.365, and (null hypothesis no. 1) was rejected.

Table 3

T-test to Compare Male and Female Prospective Teachers Regarding Environmental Awareness

Gender	N	Mean	df	t-value	Sig.
Female	225.00	0.57	323.00	-4.0930	0.000
Male	100.00	0.66			

Table 3 shows a statistically significant mean difference between male and female prospective teachers regarding environmental awareness. The t-value (4.093) was statistically significant, with the significance level of $p = 0.000 < 0.5$. This difference was statistically significant. Regarding environmental literacy, males who enter the teaching profession have a significant advantage over women who do the same, and (null hypothesis number 2) was rejected.

Table 4

T-test for Environmental Attitude of Male and Female Prospective Teachers

Gender	N	Mean	Df	t-value	Sig.
Female	225.00	3.370	323.00	-.7360	.6420
Male	100.00	3.400			

Table 4 indicates that the t-value (.736) was significant; at the p= 0.642 > 0.5 significance level, there was no significant difference between male and female prospective teachers regarding environmental attitude. The significance level was increased from 0.5 to 0.642, and (null hypothesis number 3) was accepted.

Table 5

Test Using the t-distribution to Compare the Contextual Behavior of Potential Male and Female Instructors

Gender	N	Mean	df	t-value	Sig.
Female	225.00	4.080	323.00	0.3210	0.7490
Male	100.00	4.070			

Table 5 states the results of the contextual behavior of prospective male and female teachers. The t-value was 0.321, which was not statistically significant at the significance level p= 0.749 > 0.5. This indicates no statistically significant mean difference between male and female perspective teachers regarding contextual behavior, and (null hypothesis number 4) was accepted.

Table 6

T-test to Determine the Ecological Literacy Level of Potential Teachers, both Male and Female

Gender	N	Mean	df	t-value	Sig.
Female	225.00	2.700	323.00	-1.3930	0.164
Male	100.00	2.730			

Table 6 describes the results of the ecological literacy level of prospective teachers, male and female. It is possible to conclude that there was no statistically

significant mean difference between male and female prospective teachers regarding ecological literacy because the t-value was -1.393, was not statistically significant at the p= 0.164 > 0.05 level of significance, and (null hypothesis number 5) accepted.

The above findings can be explained through the following statements:

1. A statistically significant difference was found in future educators on the Attitude and Behavior dimensions of environmental literacy.
2. A statistically significant difference was found between male and female prospective teachers regarding environmental awareness.
3. No statistically significant difference was found in the environmental attitude of male and female prospective teachers.
4. No statistically significant difference was found between the genders in the mean scores on the various measures of contextual behavior.
5. No statistically significant difference was found between the genders in the mean scores on the various measures of environmental literacy.

Discussion

A statistically significant difference was found among future educators on the Attitude and Behavior dimensions of environmental literacy; the explore results were also found by Nunez and Clores (2017), who stated that Students who finish grades K through 10 exhibit high levels of environmental awareness and attitude, as well as a reasonable level of environmental literacy and understanding. Although more environmentally aware students may not always exhibit strongly pro-environmental behaviors, they have excellent sensitivity and attitudes. Therefore, while students may have pro-environment information, this knowledge may not always convert into pro-environment activities. Last, the students' environmental literacy can be divided into three categories: pro-environmental activities, environmental knowledge, and a combination of environmental attitude and sensitivity. Kelani (2017) observed that preservice teachers had a reasonably high degree of environmental knowledge, exhibiting favorable attitudes and actions towards nature in the context of environmental education, and that these factors constituted the components of ecological literacy. Goulgouti et al. (2019) and Fang et al. (2018) also explored the same results, strengthening the current study's results.

A statistically significant difference was found between male and female prospective teachers regarding environmental awareness; study results by Bloyd Null et al. (2021) also explored the exact effects that college students are moderately environmentally literate. While they have positive environmental attitudes, their knowledge and actions are inadequate. Similar to prior research, this study found that future educators understand ecological issues and are willing to take action to protect the planet; the results of Martin-Ezpeleta et al. (2022) and Echegoyen-Sanz and Martín-Ezpeleta (2021) also strengthen the current study results. The study results are strengthened by the findings of the study conducted by Ozonur (2021); the researcher found a statistical difference between male and female prospective teachers regarding environmental awareness.

No statistically significant difference was found in the environmental attitude of male and female prospective teachers. Martin-Ezpeleta et al. (2022) and Gökmen (2021) explored the same results in their studies. In 2013, Sadik and Sadik (2014) did an analogous study that probed aspiring educators' heads, hearts, and hands. The study found that prospective teachers have moderate environmental knowledge, good environmental attitudes, and low levels of ecological activities. According to a survey by Donovan (2001) on environmental literacy among Texas State students, female students exhibit more favorable attitudes and behaviors, whereas male students are more knowledgeable. This study's findings are consistent with or complementary to those of another. There was no statistically significant difference between male and female perspective teachers' views and behaviors, but men had a higher level of environmental literacy. However, the current research results in Pakistani circumstances show that future teachers have favorable views and behaviors regarding the environment.

No statistically significant difference was found between the genders in the mean scores on the various measures of contextual behavior regarding environmental behavior. Eze (2020) also stated the same statement explored in a study; the researcher said that there is no difference in gender regarding environmental behaviors. Sulaeman et al. (2023) and the researchers Breunig and Russell (2020) also stated the same results. Kaur and Kaur (2013) researched preservice and in-service male and female teachers; researchers found that preservice male and female teachers had equal knowledge and awareness about environmental knowledge and attitude, although the results of in-service teachers showed that female teachers had

more knowledge and positive attitude as compared to male teachers. The present study results were also strengthened by another study by Kahyaoglu (2014); the researcher conducted a study on prospective teachers' gender and status wise on environmental attitudes and behaviors; research found that there was no difference in the awareness and consciousness of prospective teachers towards ecological literacy and knowledge, both genders had equal awareness and knowledge towards environment conscious.

No statistically significant difference was found between the genders in the mean scores on the various measures of environmental literacy. Nurwaqidah et al. (2020) also made the same statement after conducting a study that no difference was found between male and female literacy education measures; both had equal knowledge of environmental literacy. Study results of Svobodová (2020) also strengthen the current developments that there is no difference in gender, class, and race attitude toward ecological literacy. Örs (2022), Mardiani et al. (2021), and Troy Frensley et al. (2020) also stated the same views in their studies and strengthened the current study results. The same results were found by Kaur and Kaur (2013) and Kahyaoglu (2014); these results strengthen the conclusions of the present study.

Conclusion and Recommendations

This research aimed to evaluate future educators' environmental literacy about their knowledge, attitudes, and actions in the Lahore region. In addition, this research looked at how gender affected each facet of ecological literacy (knowledge, attitude & behavior). This study found that prospective educators have a moderate level of ecological literacy. They seem to be aware of environmental concerns in the area. In their attitudes and actions, future educators show they care about the planet and its problems.

Regarding specialized knowledge, the survey found that male prospective teachers were more literate than their female counterparts, but there was no discernible gender gap in environmental literacy. Future educators do have favorable perspectives and actions toward the environment. No significant gender differences in prospective teachers' attitudes or actions were discovered.

1. Colleges and universities that prepare future educators must include environmental studies.

2. Teachers and students alike benefit from seminars on dengue fever and visits to other municipal bodies to create awareness about environmental and global issues and practical application of students' theoretical understanding.
3. The significance of electronic and social media in this respect cannot be overstated. The government should use the media to increase students' awareness of environmental issues.

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