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Shaping a sustainable future: a study of teachers' perspectives on environmental education awareness

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ABSTRACT

This study, which investigates the pursuit of sustainable development through teachers' perspectives on environmental education awareness, has a global impact. In formal education, teachers play a critical role in delivering sustainable development content and fostering necessary skills to achieve Sustainable development Agendas (SGDs). Consequently, to familiarize with teachers' perspectives is necessary. A questionnaire was designed to collect data about the participants' views, understanding, and perception of the role of education in a sustainable future. The Likert scale tool has been employed to analyze quantitative data from a randomly selected sample of eighty-seven teachers, aiming to derive insights for the analysis of environmental education from their perspectives. The results of the multiple regression analysis, chi-square test, T-test, and Cronbach's alpha indicate that environmental education plays a significant role in preparing children for a safer future, both in Pakistan and globally. The findings show that the null hypothesis is rejected $x^2(10) = 43.5$, $p \leq 0.05$. Consequently, there is a significant relationship between educational institutes' environmental education approach and teachers' perspectives in promoting environmental sustainability. The devastating climate changes enhanced the importance of environmental education as a future of educational policies for children at an early education level, making this study a significant contribution to the global discourse on sustainable development.

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Sustainable education; curriculum; educational planning; students' awareness; future leaders

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1. Background of the study

Over the past decades, sustainable development has been perceived as a contested concept globally (Ferguson et al., 2021). The main UN summits in 1992, 2002, and 2012 on sustainable development, particularly UN Agenda 21, underscored the critical role of education in driving sustainable development, highlighting it as a crucial tool for empowering individuals and communities to attain enduring environmental, social, and economic sustainability (Leicht et al., 2018; Merler, 2023). Therefore, education for a sustainable future is a primary focus of the 2030 Sustainable Development Goals (SDGs) of the United Nations, where the goal is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Moreover, the fourth and final Sustainable Development Goal (SDG) of the United Nations calls for all students to acquire the information and abilities necessary to advance sustainable development, including sustainable education for the future (Bukhari, 2021; Imran et al., 2024).

Education and the future are intertwined inseparably, and for a sustainable future, education plays a vital role (Fulop et al., 2023a; Hamal Osmanoglua, 2012; Sujaya et al., 2023). Therefore, incorporating sustainable development into education becomes a crucial responsibility for all stakeholders, especially teachers. Moreover, it highlights the importance of engaging with and understanding teachers'

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perspectives. Studies (Abowardah et al., 2024; Fulop et al., 2023b; Hossain et al., 2022; Laurie et al., 2016) conclude that the teachers are in agreement that it is essential for the educational curriculum to integrate environmental sustainability projects. This will effectively prepare the next generation from a young age. With teachers' assistance, educational institutions can enhance students' understanding of ecosystems by organizing class discussions on environmental topics and planning field trips to natural parks. Additionally, green societies and community interactions through parent-teacher meetings or extracurricular activities can actively engage students in sustainable practices.

At the same time, from the teachers' perspective, the children learn through observation processes (Imran & Ain, 2019; Sujaya et al., 2023). Therefore, teachers' contribution to making the children learn about the environment, its awareness, and sustainability is highly recommended (Imran et al., 2021; Yousuf & Bhutta, 2012). As a result, rather than simply providing information, it is essential for teachers to encourage children to look into complex topics, how things happened, and their effects on nations. Even if the study mainly focuses on Punjab, the findings will aid in creating a natural force that will shield Pakistan and the rest of the world from the effects of climate change. Furthermore, implementing sustainable education initiatives in curricula motivates students to contribute to environmental sustainability and play them in shaping a sustainable future. Educated communities can teach their younger generations that the environment will return to what has been done to it (Haq et al., 2020) after facing the 2022 floods due to climate change in Pakistan.

2. Literature review

Environmental Education is not just about promoting nature; it allows individuals to explore environmental issues, problem-solving engagement, and practical action to improve the environment, especially children (EPA, 2022; Shwedeh et al., 2024). Children are the most vulnerable part of society and are greatly affected by natural disasters. Research concerns whether Pakistan is making plans for a year, a decade, or a hundred years through educational policies, especially after the 2022 flood catastrophe. Past studies highlighted how environmental educational policies affect students' actions in light of the recent floods in 2022 in Pakistan (Imran et al., 2021; Luz, 2015; Rupani, 2017; Sujaya et al., 2023). Additionally, education and engagement initiatives for parents and teachers can help them prepare kids for challenging situations.

According to Climate Watch (2022), Pakistan is the country most adversely impacted by climate change despite accounting for only 1% of the world's carbon emissions. It is evident after the Pakistan floods of 2022 that experts earlier identified 72 locations across Pakistan as being at risk of calamity strikes following the 2010 floods. In Pakistan, there are around 33 million members of the afflicted community, according to the Global Education Cluster. In the impacted districts, 421,000 refugees' lives are in danger. According to the UN, more than 662,000 homes have suffered some damage, while over 287,000 have been destroyed completely. The NDMA (National Disaster Management Authority) reports that 6.4 million people require aid, 1,033 people are killed, and 1,527 people are injured, but that number will rise if no preparedness is made. Over 662,000 homes have been damaged partially, while over 287,000 have been destroyed (UN GENEVA, 2022). Therefore, development in environmental education and awareness is a continuous process since each person is promoting sustainability and showing a high degree of environmental awareness and responsibility (Mughal et al., 2011).

Environmental disasters serve as a reminder for everyone to reflect on the deplorable status of the environment. Growing students' environmental knowledge, as they are the future of Pakistan, is necessary because both developed and developing nations are being harmed by climate change through education (Haq et al., 2020). Unfortunately, Pakistan's literacy rate is only 58%, far below the 88% objective set by the 2015 Millennium Development Goals (MDGs). The Pakistani government pledges to improve areas such as education, the environment, health, poverty, and starvation. However, without educating the population, it is not conceivable to promote a sustainable development agenda (Arijo, 2022).

Environmental education must be part of the future development goals globally to protect the environment and ensure smooth progress. It promotes innovative and critical thinking, encouraging learners

and teachers to participate in community development and a sustainable future through thoughtful learning and problem-solving (Kinnear, 2021; UNESCO, 1987). Therefore, awareness and education about green community development and involvement in extracurricular activities help students understand the importance of the environment and the impacts of climate change (UNESCO, 1987). Globally, industrialized countries are moving toward a concept known as 'Green Education,' which combines EE with other facets of the modern educational system (Bukhari, 2021).

In this context, Pakistan has not yet developed its EE policies and mechanisms (Bukhari, 2021). Therefore, the EE as a building block is a need of the hour to understand how to live in an eco-friendly society, especially after the 2022 floods in Pakistan. The organized attempts to explain how natural environments function, especially how humans may control behavior and ecosystems to live sustainably, are the main initiatives of the green education project. Studies (Haq et al., 2020; Sujaya et al., 2023) conclude that future generations must be raised in a culture that prioritizes environmental sustainability and fully recognizes its repercussions in various contexts.

According to Louv (2019), who coined the term 'Nature Deficit Disorder, the institutes can teach about EE to children through the enjoyment of outdoor activities in parks and environment-friendly places to help children to be more active and attentive. Outdoor activities save children from health issues like obesity, weakened senses, and difficulty focusing (Louv, 2019). Students can learn through recycling activities. Recycling children-related stuff and educational materials helps in waste diversion and improves the circular economy (Kinnear, 2021). Students learn self-expression, which allows them to discover themselves while interacting with nature in their surroundings.

At the same time, when students are taking an interest in a sustainable environment, teachers teaching through live examples and activities will ensure students that the environment is essential for their future progress. Discussion sessions also relax students' minds and give them the confidence to share their ideas (Abel et al., 2019). The present study helps raise the knowledge of leaders, educational institutions, and especially teachers about the impacts of climate change. The Pakistan Green and Sustainable Education Policy of 2021 and another initiative of the *Green School Program* (2022) will guarantee that future generations fully comprehend their responsibilities and accountability towards the environment and natural resources. (Bukhari, 2021). The policymakers of Pakistan must engage educational institutions and teachers to upgrade the Sustainable Education Policy 2021 after the 2022 floods to save the future of Pakistan. The country's goal of being clean and green will only be possible by integrating the various facets of environmental sustainability into Pakistan's educational system.

2.1. Methodology

This is a survey research design, and a questionnaire is used to collect teachers' views and perspectives on shopping sustainable future development. A two-point Likert scale (Yes = 1, No = 2) is selected to analyze the teachers' points of view on the effects of educational policies related to environmental behaviors in Pakistan. A contextual analysis approach is utilized, and information is assembled with the assistance of a survey strategy. The sample of (n = 87) teachers were randomly selected from Sahiwal District. To assess the *p* value for the null (H0) hypothesis, SPSS software performed Chi-square goodness for the fit test (x2), T-Test, and Cronbach's alpha value (α) tests. The research aims to evaluate teachers' environmental awareness based on educational curricula and institutes' priorities in this regard.

2.2. Hypothesis of research

H_1: Environmental education should be a distinct subject in the curriculum.

H_2: Teachers facilitating class discussions on environmental topics.

H_3: School-organized field trips improve students' knowledge of ecosystems.

H_4: Participation in green societies involving students in sustainable practices.

H_5: Critical and creative thinking competitions inspiring students for environmental protection.

H_6: Teacher training promoting eco-friendly behaviors.

H_7: Integrating environmental sustainability projects into the curriculum for preparing future generations.

H_8: Teachers advocating for including dynamic environmental sustainability content in the curriculum.

H_9: Educating students about the impacts of climate change.

H_{10}: Enhancing teacher training and curriculum development addressing gaps in students' environmental knowledge.

3. Findings

This study offers a detailed look at teachers' viewpoints on environmental education. The data shows that educators overwhelmingly agree on the significance of including environmental awareness in the curriculum. While current efforts to incorporate environmental topics exist, the results also point out areas needing improvement. These include increasing opportunities for hands-on learning and enhancing students' critical thinking skills regarding environmental issues. Following are the detailed results of the hypothesis.

H^1: 48.3% of teachers believe that environmental education should be an exclusive subject in the curriculum. Statistical tests showed strong support for this idea, with a T-test result of −4.295 and a significant *p* value of .000.

H^2: 73.6% of teachers reported that they incorporate discussions on environmental topics in their classes along with the curriculum. The statistical analysis supported this, with a chi-square test result of 19.322 and a significant *p* value of .000.

H^3: Only 42.5% of schools arrange field trips and activities for students to natural parks and environmentally friendly places. The statistical analysis showed that there is significant room for improvement in this area, with a *p* value of .163.

H^4: Similarly, 43.7% of schools have a green society or an extracurricular activity related to environmental issues, which suggests there is potential for more engagement in this area. The statistical analysis supported this, with a *p* value of .238.

H^5: Only 31% of schools are planning to produce skills like critical and creative thinking in competitions related to environmental awareness and protection. The statistical analysis suggested that this area could use more attention, with a *p* value of .05.

H^6: Similarly, only 42.5% of schools arrange environmental education or awareness campaign training programs, indicating the potential for improvement in this area, with a *p* value of .163.

H^7: 96.6% of participants believe that the existing curriculum should be modernized with environmental awareness and sustainability projects. The statistical analysis strongly supported this, with a chi-square test result of 75.414 and a significant *p* value of .000.

H^8: 93.1% of participants are in favor of suggesting responsible institutions add a dynamic scope of environmental awareness and a sustainable future to the curriculum. The statistical analysis also supported this, with a chi-square test result of 64.655 and a significant *p* value of .000.

H^9: 98.9% of participants agree to teach the younger generation about the effects of climate change. The statistical analysis strongly supported this, with a chi-square test result of 83.046 and a significant *p* value of .000.

H^{10}: 81.6% of participants feel that students lack environmental knowledge, values, and attitudes. The statistical analysis strongly supported this, with a chi-square test result of 34.770 and a *p* value of .000.

3.1. Discussion and analysis

Nature nurtures and instills passion and care for the environment in students through outdoor activities and community services. Love for nature will encourage students to learn more about the environment through outdoor education. Consequently, EE and outdoor education compensate each other to improve students' physical and mental health (Kinnear, 2021). It will improve academic performance and social skills, reduce stress levels, and improve social skills (Kuo et al., 2022, p. 57). The outdoor educational environment helps them to laugh, run, invent games, and enhance their creative abilities (Chawla et al., 2014). It helps them invent new stories, questions, and experiments that polish their critical thinking abilities.

Discussion sessions allow students to ask questions and clear their confusion about environmental protection activities (Kinnear, 2021). Teachers have a vital tool of 'convincing power through their persona' that inspires students. The discussion session on purchasing choices of energy-saving appliances, saving water, discarding garbage properly, and recycling educational materials can help them understand the impacts of their decisions on the environment. Students will learn why conserving energy and less fuel consumption favors the environment by reducing greenhouse gas emission rates to protect the air and ozone layer. Students with environmental knowledge will consider how their actions impact the environment and, consequently, climate change and disasters.

There is a dire need for a green and practical education policy to prevent a future climate change catastrophe in Pakistan. This educational ideology's fundamental tenet is that every discipline's curriculum and instructional strategy should include a relevant environmental sustainability component. Every grade throughout school, college, and university education should include the dynamic aspects of environmental sustainability in their curricula. For instance, the curriculum for Islamic studies could contain Islamic teachings on various environmental sustainability challenges, such as resource conservation, waste management, tree planting, etc.

Educational institutions should create collective energy inside the different disciplines and natural supportability in the personalities of the young generation (Imran & Almusharraf, 2023; Louv, 2008). Students are the future policymakers of this country. Green and practical EE will guarantee that when it is the ideal opportunity for them to become policymakers, the arrangements will be founded on the standards of a good turn of events, that is, financial, social, and ecological maintainability. Therefore, public area instructive organizations should show others how it is done and teach green administration standards in every aspect of schooling and organization.

NASA (2022) states that climate change will continue its disastrous effects unless we adopt an eco-friendly lifestyle. Educating the next generation as environmental advocates is essential for sustainable and progressive policies. It is not an overnight matter; we have to plan for long-term solutions. The online education courses make it easier for teachers to plan environment-friendly activities involving students, like cheaper paper recycling ideas. Teachers can avail themselves of the opportunity to plan lessons, develop community service project ideas, and do homework planning through different websites (EPA, 2022).

Table 1. Frequency description of the individuals' responses.

Question	Yes	% Yes	No	% No
Do you think students are lacking in environmental values, attitudes, and knowledge?	71	81.6%	16	18.4%
Does your school hold competitions that promote critical and creative thinking on environmental protection?	60	69.0%	27	31.0%
Does your school arrange training programs or environmental awareness campaigns?	50	57.5%	37	42.5%
Is environmental education being taught as an exclusive subject?	45	51.7%	42	48.3%
Have the students been educated about the effects and dangers of climate change?	86	98.9%	1	1.1%
Do you plan any seminars/talks for students to promote environmental awareness?	64	73.6%	23	26.4%
Does your school arrange any field trips to environmental sites and natural parks?	50	57.5%	37	42.5%
Should environmental sustainability projects be integrated into the curriculum?	84	96.6%	3	3.4%
Does your school have a green society or community, or offer extracurricular activities focused on the environment?	49	56.3%	38	43.7%
Will you suggest adding dynamic environmental sustainability topics to the curriculum?	81	93.1%	6	6.9%

The study aims to determine the environmental knowledge, values, and attitude level of students in Pakistan and assist with fostering an essential data set to achieve this national responsibility that will permit compelling preparation of Ecological Schooling in Pakistan. The provinces are responsible for planning educational programs for social mobility, education, and other life needs as per Act 2010 (Bukhari, 2021). The government of Pakistan can also collaborate with the National Environmental Education Training Program (NEETP) for long-term support for educational professionals to boost their environmental aptitude to teach the next generations (Kinnear, 2021).

The Green School Program (GSP) has been achieving a helpful change in the attitudes of the understudies by training kids to be all the more earth delicate. The program instills and encourages a feeling of civic responsibility among students to decrease their ecological impression. It draws students and educators into an organized environmental awareness curriculum explicitly customized to each school's yearly schedule (Haq et al., 2020). The public sector institutes have enormous areas of land that can be utilized to advance different green projects like environmentally friendly renewable energy, including solar, wind, biomass, and tree ranch. The engineering department can regulate such undertakings, and the students can deal with them, giving them pragmatic information on green administration and practices execution.

The green and maintainable schooling strategy can make it compulsory to remember the ecologically practical part of every discipline for the educational program. The nation has a responsibility to concentrate on the climate and avoid contamination. An explanation of the current climate issue is the absence of knowledge, attitude, and data about climate. An individual without ecological awareness probably would not see individuals live from now on. Table 1 shows the frequency description of the individuals' responses.

3.2. Frequency of responses

The survey included responses from 87 participants regarding their views on various environmental education-related statements. The findings revealed that while 73.6% of teachers incorporate discussions on environmental issues into their classes alongside the standard curriculum, 48.3% of respondents believe that environmental education (EE) is not formally included as a separate subject within Pakistan's curriculum. Furthermore, 42.5% of teachers reported that their schools do not organize trips to environmentally significant sites, and 43.7% indicated that their schools lack green societies or extracurricular activities focused on environmental initiatives. Regarding educational programs, 31% of teachers indicated that schools do not offer competitions centered around critical or creative thinking skills to raise awareness of environmental disasters. Furthermore, 42.5% of teachers reported a lack of training programs related to environmental awareness.

This survey further revealed that 96.6% of teachers support integrating environmental sustainability projects into the curriculum, and 93.1% are enthusiastic about incorporating dynamic environmental sustainability dimensions. The devastating 2022 flood underscored the urgency of climate change education, with 98.9% of teachers emphasizing its importance. Furthermore, 81.6% of teachers attribute students' limited environmental knowledge and attitudes to insufficient environmental awareness and education.

3.3. Findings of chi-square test

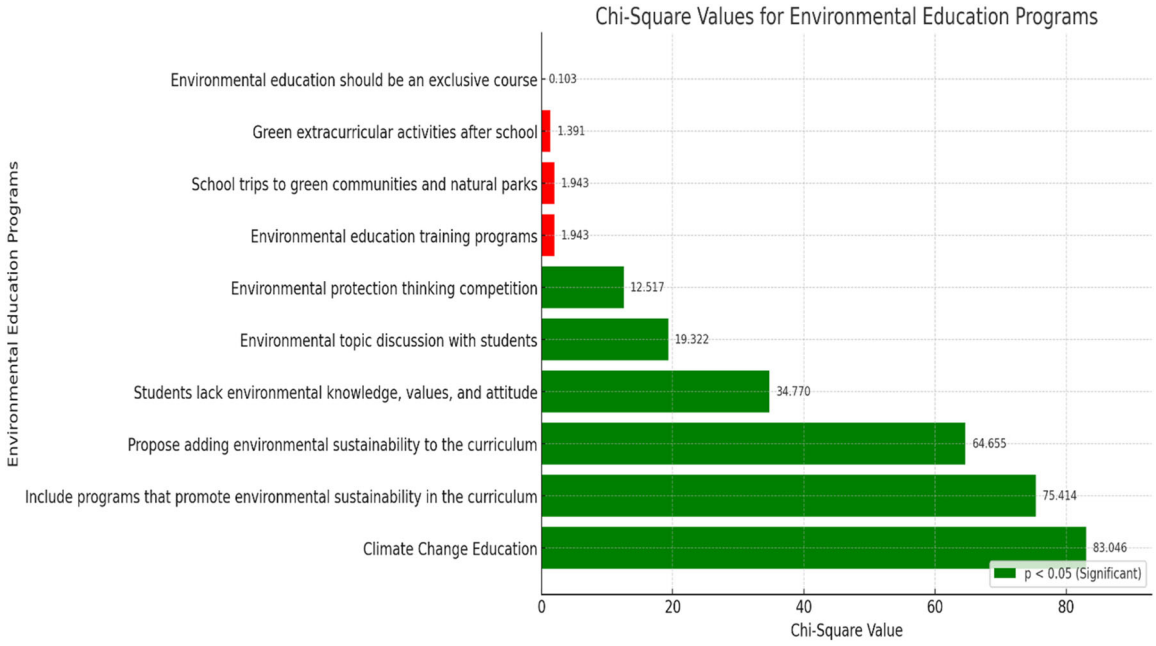

Figure 1. Details about findings of the chi-square test.

3.4. Description of chi-square results

As presented findings in Figure 1, the reaction of participants to environmental education as an exclusive course in the curriculum $x^2 = (.103^a)$, p (0.05) $\leq$ .748, and 48.3% of educators accept that there is no such specific course available in the school curriculum. However, about the discussion session of teachers in class with students on environmental awareness-related topics $x^2 = (19.322^a)$, p (0.05) $\geq$ .000. For the hypothesis about school outdoor activities such as natural parks or environmentally friendly places where $x^2 = (1.943^a)$, p (0.05) $\leq$ .163, 73.6% of teachers are discussing it in their classrooms.

Furthermore, the hypothesis result of green extracurricular activities after school $x^2 = (1.391^a)$, p (0.05) $\leq$ .238, and schools with no activity plans are 43.7%. Besides, 69% of schools are improving students' environmental protection thinking competition skills where $x^2 = (12.517^a)$, p (0.05) $\geq$ .000. The schools are arranging sessions on awareness campaigns are 57.5%, where $x^2 = (1.943^a)$, p (0.05) $\leq$ .163. In the following hypothesis, where $x^2 = (75.414^a)$, p (0.05) $\geq$ .000, 96.6% of teachers are in favor of including specialized projects dealing with environmental education in the school curriculum.

Additionally, according to the following hypothesis, 93.1% of teachers are willingly proposing to the higher authorities of the school department the inclusion of sustainability-related material in the curriculum, where $x^2 = (64.655^a)$, p (0.05) $\geq$ .000. After the 2022 floods in Pakistan, 98.9% teachers are concerned to education the future generation about sustainable environment and issues associated with climate change, where data analysis $x^2 = (83.046^a)$, p (0.05) $\geq$ .000. The frequency of DV (81.6%), teachers feel that students need more training and awareness about depicting the importance of EE as part of educational policies. The data analysis of DV is $x^2 = (34.770^a)$, p (0.05) $\geq$ .000, so the null hypothesis is rejected.

For the T-test findings and analysis, Table 2 provides a detailed overview.

3.5. Finding and analysis of T-test data

- Student environmental awareness deficiency vs. an exclusive course in the curriculum for environmental education: A significant negative correlation was found ($t = -4.295$, $p < .001$), indicating that

Table 2. Details of the T-test findings.

Pairing independent variables (IV) with dependent variables (DV) (labels/variables)		Paired differences					T	df	Sig. (2-tailed)
		Mean	Std. deviation	Std. error mean	95% confidence interval of the difference Lower	Upper			
Pair 1	Students need better environmental education – EE should be integrated across the curriculum	.29885	.64906	.06959	−.43718	−.16052	−4.295	86	.000
Pair 2	Students need better environmental education – facilitating discussions with students on environmental topics	.08046	.59491	.06378	−.20725	.04633	−1.262	86	.211
Pair 3	Students need better environmental education – arrange outdoor activities to natural parks and environmental sites	.24138	.62813	.06734	−.37525	−.10751	−3.584	86	.001
Pair 4	Students need better environmental education – green societies or after-school extracurricular activities focused on environmental issues	.25287	.66854	.07167	−.39536	−.11039	−3.528	86	.001
Pair 5	Students need better environmental education – competitions focused on critical skills that promote thinking and creativity to protect environment	.12644	.60626	.06500	−.25565	.00277	−1.945	86	.055
Pair 6	Students need better environmental education – environmental education training programs or awareness campaigns	.24138	.68141	.07305	−.38661	−.09615	−3.304	86	.001
Pair 7	Students need better environmental education – incorporation of environmental sustainability projects into the educational curriculum	.14943	.38966	.04178	.06638	.23247	3.577	86	.001
Pair 8	Students need better environmental education – suggesting higher authorities to include maximum material regarding environmental education in the curriculum	.11494	.41555	.04455	.02638	.20351	2.580	86	.012
Pair 9	Students need better environmental education – teaching children about the impacts of climate change in the context of the 2022 floods	.17241	.37993	.04073	.09144	.25339	4.233	86	.000

students with environmental education as a separate subject tend to have higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.

- Student environmental awareness deficiency vs. arranging discussion/talks related to environmental topics: No significant correlation was found ($t = -1.262$, $p = .261$), indicating that discussion sessions on environmental topics do not significantly impact environmental awareness, knowledge, and attitudes among students. The null hypothesis is retained.
- Student environmental awareness deficiency vs. specialized trips to natural parks and environment-protected places: A significant negative correlation was found ($t = -3.584$, $p < .001$), indicating that students who participate in field trips tend to have higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.
- Student environmental awareness deficiency vs. outdoor campaigns after school as an extracurricular activity: A significant negative correlation was found ($t = -3.528$, $p < .001$), indicating that participation in green societies or environmental extracurricular activities is associated with higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.
- Student environmental awareness deficiency vs. promoting critical thinking skills to protect environmental protection agenda at the multidimensional level: A significant negative correlation was found ($t = -1.945$, $p = .05$), indicating that participation in environmental competitions is associated with slightly higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.
- Student environmental awareness deficiency vs. arranging specialized training and workshop programs for awareness campaigns: A significant negative correlation was found ($t = -3.304$, $p < .001$), indicating that participation in training programs or awareness campaigns is associated with higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.

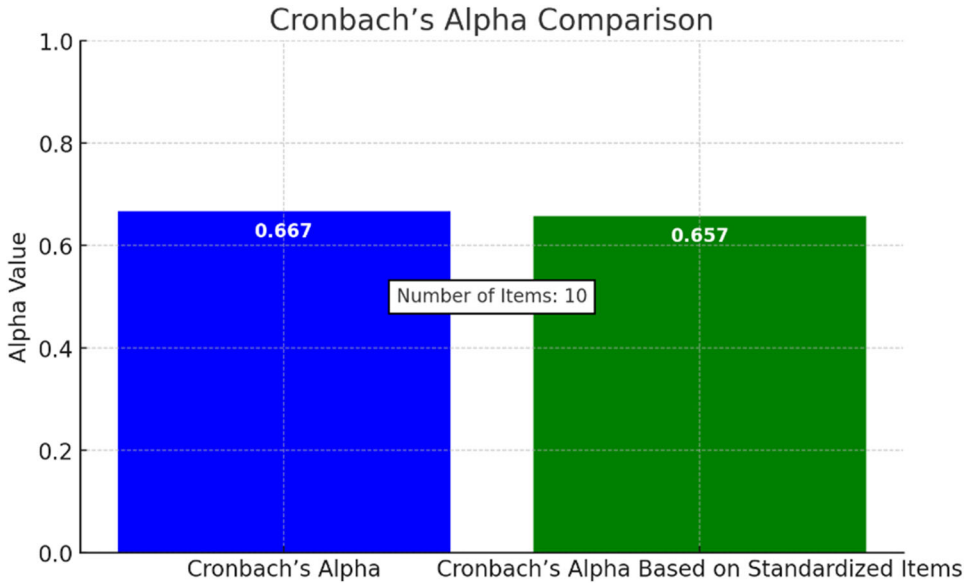

Figure 2. Details about the reliability of the statistics.

- Student environmental awareness deficiency vs. the inclusion of projects dealing with environmental sustainability: A significant positive correlation was found ($t = 3.577$, $p < .001$), indicating that the inclusion of environmental sustainability projects in the curriculum is associated with higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.
- Student environmental awareness deficiency vs. to writing and suggest to higher authorities to include more dynamic material to the curriculum related to environmental sustainability: A significant positive correlation was found ($t = 2.580$, $p = .012$), indicating that suggesting the inclusion of dynamic environmental sustainability topics in the curriculum is associated with higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.
- Student environmental awareness deficiency vs. Educate children about the effects of climate change after the 2022 floods (IDV): A significant negative correlation was found ($t = 4.233$, $p < .001$), indicating that educating children about the effects of climate change is associated with higher environmental knowledge, values, and attitudes. The null hypothesis is rejected.

The results indicate that several factors related to environmental education significantly influence students' awareness, attitude, and knowledge. Specifically, the presence of environmental education as a separate subject, field trips, extracurricular activities, competitions, training programs, sustainability projects, and climate change education were all positively associated with higher levels of environmental awareness, attitude, and knowledge among students. However, the impact of discussion sessions on environmental topics was not significant.

The following Figure 2, through Cronbach's alpha value ($\leq$0.7 developed by Cronbach's Alpha (2012), presents the reliability of the questions' comparable concept evaluated. The value is based on ten standardized items of Cronbach's alpha (α) $0.657 \leq 0.7$ The scales in this study have been shown to be reliable, indicating the reliability of the scales.

3.6. Reliability analysis

The following Table 3 presents the details about the Item-Total Statistics values.

The above-mentioned item-total statistics provide an overview that supports environmental education should be an exclusive course. It can include the biosphere, greenhouse effect, Ozone layer depletion, safe fertilization, wildlife protection, soil chemistry, waste management, pollution, ecosystems, nuclear energy, and environmental regulations. Teachers can use the environmental protection issues in the textbooks to connect ideas, particularly those related to environmental knowledge, awareness, and attitude. Textbooks and teacher training programs must improve teachers' capacity to empower students

Table 3. Details about the item-total statistics values.

Label statements	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Environmental education as a separate subject	10.0920	3.387	.153	.110	**.686**
Climate change education post-2022 floods	10.5632	3.854	.135	.409	**.670**
Environmental topic discussion sessions	10.3103	2.914	.535	.392	**.590**
School field trips to environmental areas	10.1494	2.873	.476	.414	**.602**
Green school clubs or activities	10.1379	2.888	.463	.318	**.606**
Environmental problem-solving competitions	10.2644	2.755	.615	.482	**.566**
Environmental education and awareness programs	10.1494	2.803	.523	.506	**.589**
Students' environmental knowledge and attitudes	10.3908	3.845	−.050	.137	**.711**
Environmental sustainability projects in the curriculum	10.5402	3.740	.209	.420	**.662**

with a deep understanding of environmental issues, cultivate a positive mindset, and nurture the skills needed to embrace sustainable practices.

In this context, the National Environmental Education Foundation (NEEF) can provide a platform for teachers' and students' training regarding sustainable environmental awareness in collaboration with the education department. They will receive infographics, lesson plans, activity guides, maps, and environment-related apps for their electronic devices. The zoo or environment theme park visits help students to become aware of wildlife. The teachers can help students understand animals' importance in the ecosystem (2022). Schoolchildren must be educated about waste management through different colored bins in educational institutes and urged to participate in earth-dependable exercises like tree plantation.

The educational program can be created based on different present-day instructive methodologies; for example, STEAM utilizes Science, Innovation, Designing, Artistic expression, and Arithmetic as passages for directing understudy requests, exchange, and decisive reasoning (Bukhari, 2021). Such methodologies can be mixed with an Instructional green medium, for example, using different instructional programming and equipment to improve students' abilities and skills (2019). It will coordinate the idea of natural protection as a decent deed in the personalities of our youngsters and youth, making an eco-conscious aptitude and prompting character improvement.

The Sustainable Development Goals 2030 (SDG) of the United Nations requires all students to obtain the information and abilities expected to promote EE for an economic future (Bukhari, 2021). Teachers can get help from the National Wildlife Federation (NWF) to inspire the students as future environmental guards . In addition, different websites with educational resources (Educational Resources. National Wildlife Federation, 2022), especially for children, like games, jokes, and cartoons on environmental topics, can be designed for students (Kinnear, 2021).

The environmental knowledge of society can help them figure out its importance for themselves. It is a positive commitment concerning standard training in their living locale. The advancement of average availability in Pakistan has not accustomed to the above essentials. In all honesty, as in various countries (Ham & Castillo, 1990). It enables them to manage and plan educational programs, reading material, and course books pertinent to the country's changing social and scholarly requirements. Ecological training as a separate subject for understanding climate issues is required for Pakistan's current situation.

Pakistan should return to its green and sustainable education policy in 2021 to guarantee to foster of ecological attitudes and values in people in the future, with the goal that they can figure out their obligation and responsibility towards natural resources and climate. Collaborating with governments, youngsters, teachers, civil society, and the independent business sector is the only way to protect the environment from climate change effects.

Students of separate disciplines must be taught subjects like green banking, green development, accuracy farming, green data innovation, green HRM, green assembling, and green accommodation at a higher level (Bukhari, 2021). Languages and the social sciences are also included in the scope of environmental notions, which helps students acquire and internalize them at the diversification stage. We must support students who pursue either a career or an academic path.

4. Conclusion

This study concludes that teachers' involvement in shopping sustainable futures is very significant. They can play a crucial role in the mental, physical, and spiritual growth of any nation. Therefore, to secure a sustainable future, a strong curriculum and training process requires the learners' awareness and efficiency through education. In contrast to earlier annual or seasonal planning, the current and future governments must shift toward decade-long educational planning for a sustainable future in Pakistan. In this regard, it is necessary to consider the teachers' role in propagating the significance of education for a sustainable future through educating its young people. More crucially, the implementation of plans must be carried out correctly. Through early environmental education and teachers' involvement, students can get better experience, knowledge, awareness, and enthusiasm for nature, climate change, environmental issues, and environmental preservation. This is the only way where there is a higher chance of generating a generation of lifelong environmental activists who will continue to live sustainable lives into adulthood if institutes foster this passion in young minds. The hypotheses are tested through the data analysis using a questionnaire having a range of 10 questions from 87 teachers, and the results show that the null hypothesis is rejected $x^2(10) = 43.5$, $p \leq 0.05$. Consequently, there is a significant relationship between educational institutes' EE approach and student attitudes. The implementation of environment-friendly educational policies enhances environmental knowledge and develops the values and attitudes of students.

5. Limitations of study

This study is limited to teachers; perspectives in promoting environmental education awareness for shaping a sustainable future for younger generations, particularly in the central Punjab region of Punjab, Pakistan. Another limitation of this study is its reliance on a specific demographic group, which may affect the generalizability of the findings. The participants were primarily from a particular educational context, and as a result, the insights gained may not fully represent the diverse perspectives needed to understand the broader implications of education for a sustainable future. Additionally, the scope of the study focused on environmental education, potentially overlooking the influence of economic and cultural factors that are crucial in shaping sustainable practices. Consequently, the potential beneficiary of the research is society.

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