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Status of Education for Sustainable Development (ESD) in Higher Secondary Schools of the Province of Sindh in Pakistan

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### Abstract

*Education for sustainable development (ESD) aims to educate the learners to make informed decisions and responsible actions for climate change, economic sustainability, and a peaceful society. This study aims to check the status of ESD in the higher secondary schools of Sindh province in Pakistan. This qualitative study was conducted in the selected public sector schools of two districts of the province during the period of July 2022 to December 2022. This study revealed that the status of ESD in public higher secondary schools of Sindh province is not satisfactory and schools are not providing adequate knowledge and information to students about core concepts of sustainable development. The outcomes of the study indicate the unavailability of ESD content in the syllabus, a lack of awareness of proper pedagogies among teachers and an inadequate learning environment. This study recommends introducing ESD concepts in the school syllabus and training the teachers in higher secondary schools*

**Keywords:** Sustainable Development, ESD, Public Schools, Quality Education, Educational Environment

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**Title**

### Status of Education for Sustainable Development (ESD) in Higher Secondary Schools of the Province of Sindh in Pakistan.

**Abstract**

*Education for sustainable development (ESD) aims to educate the learners to make informed decisions and responsible actions for climate change, economic sustainability, and a peaceful society. This study aims to check the status of ESD in the higher secondary schools of Sindh province in Pakistan. This qualitative study was conducted in the selected public sector schools of two districts of the province during the period of July 2022 to December 2022. This study revealed that the status of ESD in public higher secondary schools of Sindh province is not satisfactory and schools are not providing adequate knowledge and information to students about core concepts of sustainable development. The outcomes of the study indicate the unavailability of ESD content in the syllabus, a lack of awareness of proper pedagogies among teachers and an inadequate learning environment. This study recommends introducing ESD concepts in the school syllabus and training the teachers in higher secondary schools.*

**Keywords:** [Sustainable Development](#), [ESD](#), [Public Schools](#), [Quality Education](#), [Educational Environment](#)

**Introduction**

Education is an important tool for achieving development goals in the world. The purpose of Education for Sustainable Development (ESD) is to aware people of the Development Agenda 2030 of the

world and equip them with ideas and skills for achieving the SDGs in the world. ESD addresses themes such as poverty reduction, biological diversity, human rights, ethics, preservation of natural resources, (Houghton et al., [2001](#)), and disaster risk reduction. ESD allows every



human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. The conducted study is the key to sustainable development in teaching and learning. Education for sustainability requires an extensive way for changes in education, which are practised nowadays" (UNESCO, 2014). We could understand the past, seek the present, and going to planning for the future (Piozzi, 2010). The definition of UNESCO's ESD contents covers climate change, poverty reduction, disaster risk reduction and biodiversity.

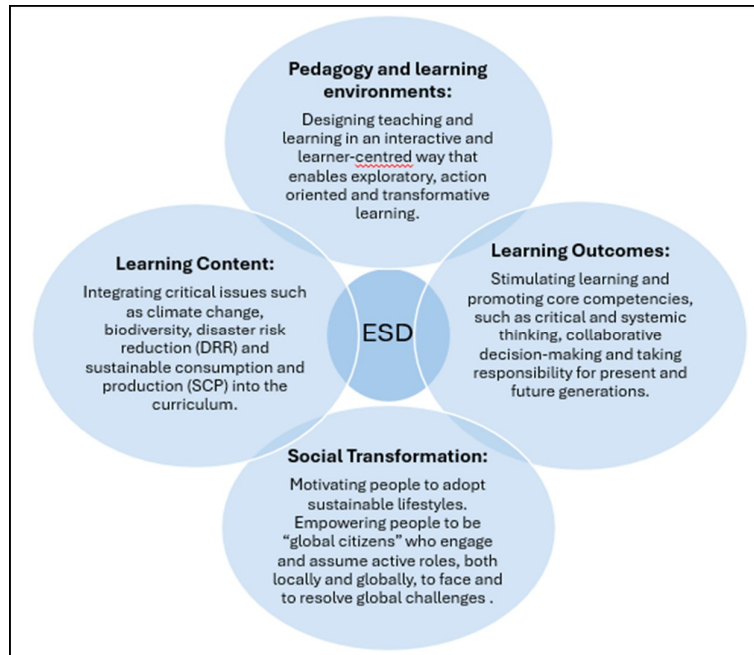
Development connects the obligation of the contemporary situation without accommodating the expertise of new generations to meet their requirements (Brundtland, 1987). Giving a definition specifies the meaning of growth for better utilization and management of all types of resources and services, not only for the meeting of needs for the present generation but also for the future generation. There is a growing need for ESD in schools and colleges to understand the SDGs from global and local perspectives. In Pakistan, there are rare studies conducted on this topic and few reports are available to provide limited information on the subject. In this context, the purpose of the research is to know the status of sustainable development education in the public schools of Sindh province of Pakistan. This study has examined the role of public schools in explaining the ESD themes among students.

### **Literature Review:**

The concept of ESD in education involves the utilization of all types of resources for the upcoming generation as well as the next generation in Education for sustainable development. In this philosophy, the teacher's education and the 2030 Agenda of Sustainable Development Goals (SDGs) are interlinked to each other. Teachers are fundamental persons who play a vital role in making

relations between students and communities for developing ESD education (UNESCO, 2018). ESD is the process of educating people about the practical way to address their own social, environmental and economic problems in their surroundings (Samueisson & Kaga, 2008). If teachers don't have an idea of how to apply modern methods and teaching skills, poor countries and societies cannot get the desired results (Imran et al., 2022). ESD focuses on current and future generations to meet their needs with a balanced and integrated approach from economic, social, and environmental aspects. ESD plays a role in informing and involving the community in developing problem-solving skills in both science and social education. There are many things that support the learning process, as well as students, educators, teaching resources or materials, media, learning methods and models (Zulfarina, et al. 2023). Education is the most powerful key to developing a concept regarding sustainability. We can make the concept of sustainability through education because education is the main key to success (Cai, 2022b). According to Brundtland Report Sustainable Development can be defined as "development that meets the needs of the present without comprising the ability of future generations to meet their own needs." (Brundtland Report, Our Common Future, Report of the World Commission on Environment and Development, 1987). Furthermore, the Education for Sustainable Development empowers learners to know how to play an active part in their local community in shaping a more just and sustainable world globally. It focuses on current global issues and prepares people to work for the achievement of the targets of SDGs at different levels in various geographical locations. UNESCO has highlighted the four core dimensions of the ESD and elaborated on each dimension for the understanding of educationists as shown in Figure 1 (UNESCO, 2016).

**Figure 1**

*Dimensions of Education for Sustainable Development (ESD)*

*Source: Adopted from UNESCO Teacher Guide: Schools in Action, Global Citizens for Sustainable Development (UNESCO, 2016).*

According to previous studies; the result demonstrates that ESD has not been fully applied in many countries including China. It is also a fact that Implementation of sustainable development in the institutions is not systematic and its precise meaning is not clear (Zhiyoung, 2022). There are many problems in education which are directly related to poverty and inequality rural poverty in Sindh affects the capacity of villagers to send their children to schools and alternatively engage in routine business activities (Guriro & Pathan, 2015). The same situation was observed in another study about the status of millennium goals (MDGS) in Pakistan which noted that 500 million people are affected by extreme poverty (Guriro et al., 2019). This is also the fact that there are many programs running for poor persons like the Benazir Income Support Program and Ahsas Program for reducing poverty and achieving the SDGs targets. Many organizations including social welfare organizations are also working to reduce and control poverty in Pakistan. There is an essential need to sensitize people about this poverty situation and sort out the ways to get rid of it. It is therefore, students must be

given education about poverty concepts and reduction strategies. In the same way disaster risk reduction is also a main matter to be discussed with students in schools (Quesada-Romána, and Campos-Duránb, 2023)). In the context of SDGs, climate change is also a major factor in maintaining biodiversity and an ecosystem like high temperatures which are also responsible for changes in biodiversity and ecosystem (Chase et al. 2023). Disasters are responsible for the reduction in biodiversity and they also affect the ecosystems all around the world. On the other hand, Global warming is alarming for us; it is impacting on climate. Previous studies show various causes of climate change. Human activities are involved in doing worse to the Planet Earth including frequently used fossil fuels, cutting trees that cause deforestation and resulting in floods and other disasters. Humans, animals and insect species are in danger because of climate change (Harvey et al., 2022). Hence, it is important to give awareness to the people about climate change and its impacts. Furthermore, it is pertinent to aware students of ESD themes like reducing carbon dioxide in the atmosphere from the transport industry by 2050 (Kwilinski et al., 2023). Climate change is a very

serious matter that is affecting our health. And mental health also like our health s damages our emotional, and behavioural health (Schwartz, et al. [2022](#)). Previous studies show that climate change impacts jobs, innovation, and risk sharing in capital markets. A key challenge in measuring these impacts is that it is difficult to tell how individual firms are affected by climate change (Saunter et al., 2023).

Many countries have understood and taken initiative steps such as education needs for sustainable development. The situation in Pakistan is quite different. She is facing many challenges due to the lack of awareness, policies and funding. Poverty and illiteracy are the main barriers to the progress of Pakistan. The country is facing a lot of global challenges such as poverty, climate change, education, Pollution, tolerance, health, illiteracy, terrorism, peace, basic needs of life, etc. according to the previous report about educational policies of Pakistan. These issues are instantly and diffusely related to education, economic development and growth (Khushik & Diemer, [2018](#)). Few Environmental themes are highlighted in science and social studies subjects among primary to secondary levels books as well as few lessons are included in the language subjects in Pakistan's curriculum (Shahid et al. [2005](#)). ESD makes a speciality of growing competencies between pupils and people, to motivate and encourage them to grab in viable behaviour by thinking about ongoing and planning economic, political, cultural and environmental effects both locally and globally (Khataybeh et al., [2010](#); Rieckmann, [2018](#)). Education is a major factor in the assistance of sustainable development as well as the growth of peoples' skills with environmental and development issues (Gadotti, [2008](#)). ESD can help in promoting well-being globally and protecting natural resources and biodiversity (Atkinson et al, [2007](#)). Applying ESD in formal education takes time to improve student's action competence (Olson, et al, 2022). People are negatively impacted by the environmental, economic and energy crises in Pakistan. It is important to raise awareness and sensitise to encourage people to adopt sustainable behaviours. The teachers' role is very crucial because teachers have the art

that how to transfer concepts about the ESD themes for creating balanced human societies (Kulsoom, Qureshi and Khanam, [2019](#)). People all around the world have understood that the current economic progress is unsustainable so it is important to concentrate on citizen education, community awareness, and training as these are the crucial steps that will help society become more sustainable (Basera, [2016](#)). Teachers should be aware about to give awareness such as water pollution, recycling of wastages, climate change, intercultural understanding, and protection of energy to transfer information to students (Esa, [2010](#)). Currently, it has been observed that most courses in school and college education including undergraduate programs are not updated for ESD objectives. Previously no detailed study is available to show the real data about ESD education in Pakistan. Hence, there is a need for time to assess the status of ESD education in schools in Pakistan (Durani et al, [2019](#)).

### **Methodology**

This is a qualitative study conducted in selected public schools of Sindh province in Pakistan. We randomly selected 20 higher secondary public schools from the two districts of the province. Among these 04 were girls and 06 boys schools. The data was collected through 20 interviews with the heads of the public schools in the study area. In the first stage, 10 schools were selected from the District of South Karachi, and 10 schools were selected from the District of Khairpur. Information was collected through audio recordings and after that, the data was transcribed, organized, and interpreted in the shape of results.

In order to assess the status of ESD in the higher secondary public schools of Sindh province, we developed 04 major themes about the concept of ESD i.e. Climate change, Biodiversity, Disaster risk reduction and Poverty reduction. Furthermore, we divided those major themes into 03 sub-themes and asked questions related to those sub-themes from the heads of schools in the study area as shown in Table 1. Each high school selected for study has been given a specific number and

their identity has not been disclosed in this study. The consent form from the head of the school has been sought before the conduct of the interview.

**Table 1**

*Themes of the Study*

Major Themes	Sub Themes
<b>Climate change</b>	Syllabus for climate change Teachers talk about climate change. School activity for climate change awareness
<b>Biodiversity</b>	Syllabus Extinct Animals Importance of Save Species
<b>Disaster Risk Reduction</b>	Geography Natural Environment Recovery and resilience
<b>Poverty Reduction</b>	Poverty concepts Poverty status of students School initiative for poverty reduction

## Results and Discussions

### Results of Schools from District Khairpur:

#### Higher Secondary School 001

Following the first Major theme, "Climate Change" the result shows only a few lessons about the ideas of climate are included in the curriculum of Science and Social Studies as narrated by the head of the school. The interviewee responded that the teachers can play a vital role in fostering knowledge related to climate change and its impact on the environment and also provide them with knowledge about fundamental precautionary measures but unfortunately, the course contents are not relevant in this regard. As far as the second Major theme, "Biodiversity" is concerned teachers in that school follow the instructional strategies to let students know about the different species of plants and animals found in local and global regions and how ongoing environmental changes and human activities have become a major cause of the destruction. Moreover, the respondent expressed that no proper efforts are made in education towards themes like "Disaster Risk Reduction" and Poverty Reduction.

#### Higher Secondary School 002

In response to the first major theme of this study "Climate change," it was noted that Earth Day and World Environment Day were celebrated by schools. During these occasions, activities like 'Plantation', a minute of Silence', and 'Energy saving acts' are performed to focus on the importance of Climate Change among students. Furthermore, the results extracted from the information provided by the School management show fewer educational trips were arranged to different places such as zoological and botanical Gardens and Safari Parks for their students to bring awareness related to the local fauna and flora in response to the theme "Biodiversity". Moreover, in response to the third major theme "Disaster Risk Management" results reflect the limited knowledge being transmitted among the school individuals regarding the action plans to control dreadful natural disasters such as floods and droughts. And for the theme "poverty reduction" the obtained results show none of such activity is witnessed to be conducted in the entire history of school.



### **Higher Secondary School 003**

The responses for the theme "Climate Change" show that the only information that is included in the textbook is conveyed to the students. Moreover, the respondent denied the implications of any other activity relevant to the mentioned theme. In the response to the second theme "Biodiversity," it was extracted that the educators only follow a demonstrative method of instruction and use a textbook as a tool to synthesize knowledge about the ecosystem aided with relevant pictorials. Further, in the response to the third major theme "Disaster Risk Reduction" it is extracted that none of the activity is noticeably followed during the whole teaching and learning process. However, there are fewer practices applied to develop the concepts of poverty management, and students were engaged in making efforts such as collecting money for charity purposes for the poverty-affected people.

### **Higher Secondary School 004**

In light of the responses regarding the first Major theme, "Climate change," it was concluded that no efforts were made by the School management and Teachers. The traditional lecture method was used in school teaching but and no major factors affecting climate, and the ways to get rid of problems initiated by human activities like fossil fuels consumption and management of waste materials were discussed. As far as the second Major theme 'Bio-Diversity' following "Disaster risk reduction and the other theme "Poverty reduction" is concerned fewer rules are made in the school books such as; restrictions for tree cutting and flower plucking only. Whereas there was no such activity observed for fostering information about disaster risk reduction and poverty management.

### **Higher Secondary School 005**

In relevance to the first major theme "Climate Change," a teacher-centered classroom environment was followed and the relevant information was transferred to the students using a demonstrative strategy. In response to

the second major theme "Biodiversity," it was observed that no information was provided related to extinct and endangered species found in the local and global context. Whereas results show no such noticeable evidence found for activities and teachings regarding the themes "Disaster Risk Management" and "Poverty reduction".

### **Higher Secondary School 006**

According to the major theme "Climate Change," it is noticed that teachers are involved in various activities to synthesize knowledge related to environmental issues like pollution and make students able to make certain efforts to control pollution to keep the surroundings clean. For the second major theme "Biodiversity" the students were taught with limited information about the species of insects, plants, and animals found in the surrounding region. According to the results, unfortunately, no information is processed by the teachers or management regarding the themes "Disaster risk reduction" and "Poverty reduction".

### **Higher Secondary School 007**

The observed data leads to the results that there is limited knowledge available in the syllabus about the geography of Pakistan but no proper practical and theoretical knowledge is conveyed to the students regarding all the major themes of the study "Disaster risk reduction, Climate change, poverty reduction and biodiversity".

### **Higher Secondary School 008**

Results about the major theme, "Climate Change" tell that the school only relies on classroom lectures and information in the syllabus but no extra effort is made to foster knowledge about climate change among students. Furthermore, fewer activities were conducted to provide fundamental knowledge about disasters regarding the theme "Disaster risk reduction". And results obtained for the theme "Poverty reduction", show there is no sufficient information nor is any activity observed by the school administration

### Higher Secondary School 009

Response for the first major theme "climate change" shows some school events like annual cleaning week and gardening activities to make individuals aware of the importance of clean surroundings and their vital role towards climate change but no awareness is provided about components comprising the second major theme "biodiversity" to students. The school is located in the region surrounding agriculture and teachers feel it mandatory to inform the individuals about the disasters that can destroy agriculture and its impact on rural and urban lifestyles. No efforts are made to conduct activities to foster poverty management in response to the theme "Poverty".

### Higher Secondary School 0010

The school is found to be the most surprising sample in terms of results regarding all the major themes of the study such as "climate change, poverty risk reduction, and poverty reduction" are concerned. It was observed that there was no particular information found related to activities and instructions provided by the teachers. No information was delivered on biodiversity and none of the efforts observed regarding poverty.

### Results of Schools from District South Karachi:

#### Higher Secondary School 0011

According to the obtained information for one of the major themes "Climate Change," it was noted that fewer group activities were conducted to impose practical knowledge about climate change in that school. For the second major theme "Bio-Diversity" head of the school reported that school officials arrange annual visits for students to the Zoo where students learn more about animals and the ways to protect wildlife. In response to the other theme "Disaster risk reduction," it was noted that few lessons were included in the curriculum of science and social studies For the theme "Poverty reduction" it was noted that some positive efforts were made by teachers to bring empathy among the students and teachers by organizing small social gatherings on

the school premises where students and teachers from stable financial backgrounds help those with the least financial background to manage poverty.

#### Higher Secondary School 0012

The school head informed about the first major theme "Climate Change" and said fundamental concepts regarding climate change are shared among the students using activities-based learning strategies. For this, a certain task is designed including waste management, and using fossil fuels, and mostly focuses on the rules of three 'R' i.e. reduce, reuse, recycle, and vice versa. The results regarding the second theme "Biodiversity" it was learned that teachers emphasize more upon the textbook knowledge and transform the information provided in the syllabus, as far as the other themes "Disaster risk reduction" and "Poverty reduction" are concerned teachers use self-made efforts to inculcate the information among individuals.

#### Higher Secondary School 0013

Results of the first major theme "Climate Change" show that few teachers follow the activity-based teaching methods in the classroom to make students able to know about climate change and how they play their role to control the upcoming catastrophes of climate change. As far as the theme "Biodiversity," is concerned school teachers teach students through textbooks which lack proper details. In response to the theme "Disaster risk management," there was no progress. As far as the theme "poverty reduction" is concerned teachers believe moral values taught in Islamic studies can help reduce poverty therefore they emphasize more on it.

#### Higher Secondary School 0014

For climate change the school was celebrating international days including Earth Day and World Environment Day and apart from this, no other creative activities were witnessed to be conducted. Further, the concluded result outcomes for the other theme "Biodiversity" show no efforts are ever made by teachers or the school management. As far as the theme "Disaster

risk reduction" and "poverty reduction" is concerned the results reveal that students and teachers are aware of the fundamental things about disaster and teachers only provide limited knowledge using the textbook as a tool. For poverty reduction, teachers follow instructional methods to develop habits like 'helping others' etc.

### **Higher Secondary School 0015**

This school teach students through a few lessons about climate change as told by the school headmistress about the first major theme of the study. The result outcomes regarding the second major theme "Biodiversity" show the teacher's involvement in producing limited knowledge related to the biotic and abiotic components of biodiversity. Further, there is no evidence found related to activities-based learning regarding the theme. In response to the theme "Disaster risk reduction," the results show none of the efforts made by teachers or the school management to develop conceptual knowledge and transform theoretical knowledge into practical life. Furthermore, in the results for the theme "poverty reduction," the teacher shows some efforts to build concepts of poverty management and the factors that help in poverty reduction.

### **Higher Secondary School 0016**

For the major theme, "Climate Change" the school head informed me that there are a few chapters included in a textbook about climate change and its pros and cons. Moreover, activities such as international "Earth Day" are celebrated annually in the school. In response to the theme "Biodiversity," he informed that the lack of theoretical as well as practical knowledge related to biodiversity and its components is found among teachers and students. The results for the other theme "Disaster risk reduction and Poverty reduction" show no activity conducted regarding disaster risk reduction but fewer classroom activities are designed and applied by the teachers to build concepts related to poverty.

### **Higher Secondary School 0017**

For the first major theme, "Climate Change" interviewee said that 'Cleaning Week' has been observed regularly in the school. In response to the other themes "Biodiversity and Disaster risk reduction" school head mentioned that no such effort was made by teachers and the school management to transfer knowledge. As far as the last theme "Poverty reduction" is concerned the school reveals that social and welfare organizations are engaged in working for poor students and they help students by giving free uniforms, warm clothes in winter, bags, shoes, etc.

### **Higher Secondary School 0018**

This school did not in practice enforce "Climate Change" ideas in the syllabus and learning. In response to the second major theme "Biodiversity" it was learnt that teachers are applying the traditional lecture method to fill the student's brain with information related to components of biodiversity. Schools also arrange fewer visits to places such as Zoo and Safari Parks to develop an understanding of the habitat of different animal species. For "Disaster risk reduction and Poverty reduction" it is found that there is no such lesson included in the syllabus that reflects the understanding of disaster, its causes and impacts on the surroundings and the steps taken to avoid the risks. In response to poverty reduction, the results reveal there are only fewer activities implicated by the teachers to help students understand the poverty reduction methodologies.

### **Higher Secondary School 0019**

In response to the Major theme "Climate change," school management said that there is no such effort made by the school management and teachers to promote knowledge and awareness about the ongoing climate change and its impacts, and no such activity-based teachings and guidance are provided to tackle these conditions. The results for the second major theme "Biodiversity" reveal the same situation where the teaching staff is found unaware of biodiversity and its components as told by the school representative.

Whereas in response to the other themes "Disaster risk reduction" and "Poverty reduction" the school was

imparting knowledge in the form of moral stories to develop empathy among students.

### **Higher Secondary School 0020**

This school observed "Earth Day" regularly when we asked the head of school about the climate education in the school. The traditional lecture method is applied for the second major theme "Biodiversity" and students are filled with knowledge about extinct animals and other endangered plants and animal species. Whereas in the response to the other major theme "Disaster risk reduction," the results show the school management has never been involved in designing activities nor have the students been taught anything about disaster and its management. As far as the other major theme "Poverty reduction" is concerned fewer activities are performed annually in collaboration with social welfare organizations in the school where donations are made for education, stationery items, clothes, bags and shoes.

### **Conclusion and Recommendations:**

The findings of this study reveal the status of ESD practices in the higher secondary public schools of Sindh province in Pakistan. The overall status of ESD is not up to mark in the public schools of the province. The major themes of ESD are not included in the school syllabus and students are not given proper knowledge and guidance for a variety of ideas and concepts of

sustainability. However, there are a few things observed in this study which are followed by some schools in order to educate students about sustainable development. Some schools are focusing on climate change through traditional lectures and special day celebrations. Some schools were organizing exposure visits and excursions to educate students on the concept of Biodiversity and protecting eco systems at the local level. Although Disaster risk reduction and poverty are major themes of sustainable development but majority of the schools have no proper method of guidance and awareness for the students. This study found some schools involved in getting funds from charity organizations and distributing things among the poor but no major initiative has been taken for education in this regard. This study also found a lack of awareness among school teachers regarding the concept of education for sustainable development at the local level. There is a dire need to foster education and skills regarding ESD among higher school students. Government educational authorities must organize teacher training programs to increase teachers' knowledge and skills about Education for sustainable development. There is a need for a specific course or subjects related to ESD major themes in the curriculum at each level. This study also recommends the inclusion of topics and activities in the syllabus related to climate action, disaster risk reduction, poverty, and the geography of Pakistan.

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