Achieving Sustainable Development through the Study of Geography

An Analysis

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Abstract

The Agenda 2030 of Sustainable Development (SD) identifies quality education as its fourth agenda towards reaching SD. This has added an enhanced emphasis on education, which aims towards sustainability. Education, which is regarded not only as means to achieve other goals but also an end in itself, has overarching impact on the well-being of individuals. Study of geography, armed with pedagogy and technological intervention fulfils the agenda four and covers many of the agendas identified towards reaching SD. These include no poverty, zero hunger, good health and well-being, gender equality, and clean water and sanitation, etc. This paper, therefore, tries to bring forward the role of education in general and the study of geography in particular, in reaching out to these goals. The paper attempts to discover the manner in which various concepts of SD can be incorporated in the learning-teaching of geography, primarily at school level. An analysis of the NCERT's curriculum on the education on SD has also been attempted. An attempt has also been made to devise a course plan and pedagogical integration of the idea of SD at various stages of education to form a synergy with the real world.

Keywords: Geography and Environment, Geography and Sustainable Development, Education for Sustainable Development, Pedagogy and Sustainable Development.

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Introduction

As the Brundtland Report states, "Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Report of the World Commission on Environment and Development: Our Common Future, 1987). The Brundtland Report of the World Commission on Environment and Development (1987), and the consequent Earth Summit of 1992 (in Rio de Janerio) gave impetus to the world about the urgent need for SD. This started the process of international cooperation on development and related environmental issues. The Agenda 21 signed during this summit made the countries in committing themselves to promoting sustainability through diverse means, which includes education. The Brundtland Report highlighted the matter on how social and economic factors are a contributing cause of environmental problems. Many a times these factors generate major environmental problems. The importance of education and awareness in sustaining the developmental processes can be put identified at this point. Even the Stockholm Declaration of 1972 (Report of the United Nations Conference on the Human Environment, 1973), Belgrade Charter of 1975 and Tblissi Declaration of 1977 (Intergovernmental Conference on Environmental Education, Final Report, 1978) clearly delineated goals, objectives and guiding principles of environmental education. Keeping this in mind, the paper tries to bring forward the manner in which education can be instrumental in achieving the goals of SD.

In the recent decade apart from environmental education, the disciplines of economics and other sciences have seen a revival of interest in the role of 'social norms' in individual decisions, which also has an influence on developmental economies (Dreze and Sen, 2002). The focus of this school of thought has been the idea on how social norms can emerge or sustain themselves, in a framework where individual decisions get driven. The social norms themselves get influenced by the public discussions and social interventions. The role of 'social norms' has also given rise to the politics of health and education as a part of the larger issues of democracy in India and in several other countries of the world.

Context and Objectives

In the above context, this paper deals with the importance of education in understanding SD. It tries to explain as to how both these aspects are interrelated with each other. The discussions importantly accommodate geography as a discipline in understanding and practicing development in a sustained manner. Geography, with its changing paradigms has made itself suitable for the transforming

needs of the society. The paper, thus, tries to draw attention on the fact that geography as a subject matter in itself is close to SD. Its inter-disciplinary nature, thus, makes it all the more integral part of the latter. The paper also tries to explore the manner in which geographical knowledge, both Indian and western have been talking about SD.

In the present context when the world and also India is trying to generate awareness on Sustainable Development Goals (SDGs) through various initiatives, such as Mission LiFE, the paper tries to draw attention that how education and teaching of geography especially at the school stage itself can be instrumental in achieving these goals.

Education for Sustainable Development

It was a result of Earth Summit and Agenda 21 and several others that many national and internationally funded literacy programmes were launched in the developing world. The new Agenda of SD adopted in September 2015, made the international community recognise that education was essential for the success of all 17 of its goals. Education was already been considered as one of the aspects of measuring human development alongwith economic, health and gender-related indicators. Non-literacy has been considered as a type of 'social unfreedom' by Sen (Dreze and Sen, 2002). Ambitions for education are essentially captured in SDG 4 which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Leading SDG 4: Education 2030). The Incheon Declaration adopted at the World Education Forum in May 2015, UNESCO, as the United Nations' specialised agency for education, was entrusted to lead and coordinate the Education 2030 agenda with its partners (Leading SDG 4: Education 2030).

The new agenda of education of focus on inclusion and equity aims at providing everyone an equal opportunity. The focus on education quality, learning and skill generation highlights another important issue of the danger of concentrating on access to education without paying enough attention to whether students are learning and acquiring relevant skills once they are in school. The present discussion tries to focus on these perspectives, which have been part of various subsets of human geography.

The new dimensions of education embedded in its holistic and humanistic vision, contributes to a new model of development. This goes beyond a utilitarian approach to education to integrating the multiple dimensions of human existence. It ranges from Early Childhood Care (ECC) to university education (Global Education 2030 Agenda). Since, Early Childhood Care and Education (ECCE) and school education are the building blocks for exposing children to their surrounding and inculcating

concepts of SD, it becomes important to discuss about the linkage. This aspect has been discussed in the present work in the context of learning-teaching of geography.

The main responsibility for implementing the agenda lies with governments, United Nations Educational Scientific and Cultural Organisation (UNESCO), and partners, in providing support at global, regional and national levels. It includes to transform society by reorienting education and to help people develop knowledge, skills, values and behaviours needed for SD. It is about including SD issues, such as climate change and biodiversity into learning-teaching, and encouraging individuals to be responsible actors. All these can be incorporated through school education.

There has been a growing international recognition of the scope of Education for Sustainable Development (ESD) and the results it can achieve. It acts as an important element of quality education and also operates as a facilitator for SD. Therefore, the SDGs adopted by the global community for the next 15 years include ESD. The target 4.7 of the goals of SD is on education which addresses ESD and related approaches, such as Global Citizenship Education. ESD is a transformational education which takes into consideration a holistic approach. It works under three heads, i.e., learning content, pedagogy and learning environments, as shown in the Fig 1.

The three aspects of ESD result in social transformations. Social transformations take place through empowering learners of any age, in any education setting, to transform themselves and the society they live in. Another result of these aspects of ESD is the learning outcomes. It includes stimulating learning and promoting core competencies, for example, critical and systemic thinking,

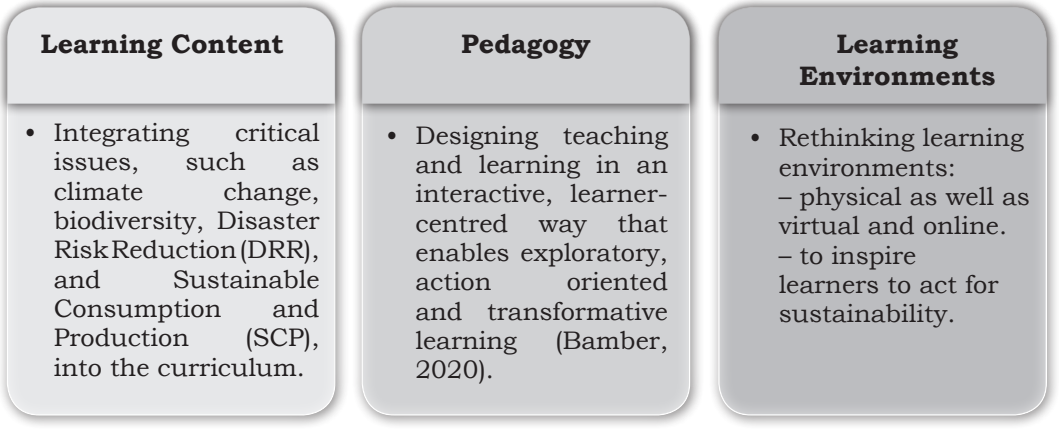

Fig 1. The three heads under which the ESD works

collaborative decision-making and also taking responsibility for present and future generations. The decade of 2005–2014 declared as the United Nations Decade of Education for Sustainable Development (UNDESD), aims at mobilising the educational resources of the world to help in creating a more sustainable future and education has been considered as one of the paths to achieve this.

Apart from designing and implementation of aspects of SD through education it is also important to evaluate and monitor the efforts. For this purpose, a set of indicators have been devised (Education 2030, Incheon Declaration and Framework for Action for the implementation of SDG 4), which range from the aspects of learning, completion, participation, provision to readiness, skills, equity cross targets, policy and knowledge.

Geography as an Integral Part

Geography being a discipline of Social Science is by its nature a study of human-environment relationship. The history of geography as a discipline, traces the association of human beings and environment. The subject matter, therefore, deals with the nature of association and the level of influence of environment on human beings and human on environment. The concepts like determinism, possibilism, neo-determinism and probabilism rest on the basic concept of human-environment relationship. Extending the scope of geography on the concepts like distribution, resource utilisation, development, equity and well-being have made the subject closer to the human aspect. Several branches of geography, such as historical geography, physical geography, economic geography, resource geography, environmental geography, cultural geography, social geography and gender geography (and ecofeminism), (Gregory et al., 2009), have been dealing with the idea of human-environment, developmental concepts and the issues of sustainability in different ways.

In a larger perspective of considering other disciplines and educational dialogues, the principles of environment education were first put forward in the Tbilissi Declaration in the year 1978. Nevertheless, the new dimensions and the focus on environmental education for SD have been included in the recent years. And although, the concept existed earlier too the holistic approach towards including the basic rights of development of people got induced in it, and not just narrowly focusing on the conservation and protection of the natural environment. The inclusion of social aspect and the rights of human beings were incorporated in the backdrop of association of human with its environment and the ecological concept. Ecosystem includes not only the physical environment but also human beings, forming an integral part of it.

Almost all action themes of the UNDESD, such as environment, water, sustainable consumption, rural development, intercultural understanding, sustainable tourism, cultural diversity, disaster reduction, biodiversity climate change and market economy, have a geographical dimension and are therefore, of great importance in geographical education (Haubrich, 2007).

The questions that are important to geographers are—'who' gets 'what', 'where' and 'how'. These questions automatically inculcate population, resources, location, distribution and interactions. These aspects can further be dissected into, for example, the nature of resources, their distribution and utilisation, how much resources are available for utilisation for a particular community, processes involved, equity, political economies, interactions between human-environment and within different groups of human beings, etc., depending upon the field of study and the nature of problem. The inclusion of such concepts and well-being in sustainable development may seem to be new in larger ambience of many disciplines, but it has a deep-rooted relationship with Geography. Although, the developments in physical and human geography have many a time created confusions about the scope of the subject per. Nevertheless, the subject has been able to rise and grow out of all the challenges to be effective in reaching the SDGs.

Historical Legacy of Aspects of SD in the Study of Geography

Environmental concerns and the aspects of SD discussed above have been an integral part of the learning-teaching in the India. The ancient writings like *Puranas* and *Upanishads,* which date back to about 3000 BCE, have been a storehouse of knowledge on environmental education, and a sense of belongingness and collective action. The writings of *Taittiriya Upanishad, Katha Upanishad, Yajurveda, Kurma Purana* and *Garuda Purana* signify such aspects (Ali, 1983; Valdidya, 2012). However, many of these writings are in the form of *slokas* and also hymns symbolising prayers to various Gods of nature. A few examples follow:

"Om shanno mitrah shan varunah.....Om shanti, shanti, shanti....." from S*hiksha Valli, Taitiriya Upanishad* talks about various elements of nature and their conservation through paying respect to them. Similarly, the vedic *mantra*, "*Chandra ma va apam pushpam, pushpavan prajawan pashuman bhavati.....*" stated in *Yajurveda,* signifies the importance of elements of nature and their conservation aspects. This *mantra* also states that the one who knows these elements of nature, and the animals and plants, is the one who can rule the world or can become the king. The *sloka*, "*Om sahanavavatu sahanau bhunaktu.....Om shanti, shanti, shanti*", of *Bhamhananda Valli* and

Bhrigu Valli of *Taittiriya Upanishad*, *Katha Upanishad* and *Shvetashvatara Upanishad* talk about sense of togetherness, cooperation, and the collective growth and development of individuals.

In the Western world, in writings of the Greeks, geography was closely associated with political and moral philosophy. The writings of Kropotkin (1842–1921) provide a rare and modern emphasis on the importance of such issues. These were then, revived most effectively by Harvey in the second half of the twentieth century (Gregory et al., 2009). As a result, a series of questions erupted regarding epistemology and the limits of geographical knowledge.

As Harvey pointed out that, "the contemporary battleground over words like, 'nature' and 'environment' is a leading edge of political conflict, precisely because of the 'incompletely explicit assumptions, or more or less unconscious mental habits', which surround them" (Harvey, 1996). Here, focus is on the relationship between human activity and well-being on one hand. Whereas, the condition or health of the biome or ecosystem supporting human life, specific qualities of air, water, soil, and landscapes and thirdly, the quantities and qualities of the natural resource base for human activity is on the other hand (Harvey, 1996). Thus, the concept of SD has been related to the study of environmental education in promoting development based on optimum and wise use of resources with equity and durability.

Similarly, physical geographers were also hit by such changes in geography but they seem to have been more directly moved by the consideration of an explicitly environmental ethics. Ratzel is believed to put 'the human back into geography'. According to him, "the discipline could not be assimilated to the natural sciences but on the contrary, had to explore the reciprocal relations between 'culture' and 'nature'. It also had to set those relations in motion by recognising the dynamics of spatial formations" (Gregory et al., 2009). His efforts are believed to lay foundations of biogeography. Moral philosophies have assumed extensive prominence in contemporary geographical enquiry. So much so that some observers, such as Smith, Lee and others have recognised a 'moral turn' across the discipline as a whole. Another result of geographical enquiry towards change and the future has been the recognition that geography's responsibilities have involvement in public policy and engagement in public debate.

The Recent Focus

The recent development in Geography about human-environment relationship came during 1990s, with the acceptance of the impact of human on climate change. This period saw environmental protection movements, global climate change discourse

taking geopolitical importance and increased political interest. These generated a social assertion towards human-environment relation in all the disciplines. Postmodern and post-structuralist approaches have radically changed the philosophy of human-environment research in geography and other social sciences. These approaches centre on the view that every representation of the nature is a social construction, the manifestation of some kind of social norm. Inclusion of perception and mental constructions have thus, turned the idea of environmental determinism inside out—that is, from human to environment. They, in this course have also pointed out that the separation of nature and society whatsoever existed in social sciences, was a heritage of Western philosophy. Both were essentially in coherence with eachother as per Indian philosophy.

Pedagogical Integration into the Subject Matter of Geography

Geography, as a discipline has a broad approach towards the study of environment, society and human beings. It is an interdisciplinary science dealing with several of these aspects and to the most structures, which have to be transferred into a sustainable development. Therefore, geographers in general and educational geographers in particular, are needed in several institutions. Educators of all other disciplines are also expected and encouraged to take the lead in preparing individuals for their active roles, in spreading the goals of SD to their local communities. This requires redesigning their curricula to incorporate a distinct active, community partnership dimension.

The most important geographical competencies as mentioned by the International Charter on Geographical Education mentions are crucial to implement SD of the future world in three ways (International Charter on Geographical Education, 2016).

These competencies are, firstly, the knowledge and understanding of major natural systems of the Earth (landforms, soils, water bodies, climate and vegetation), in order to understand the interaction within and between ecosystems and major socio-economic systems of the Earth (agriculture, settlement, transport, industry, trade, energy, population and others), for achieving a sense of place. This involves:

(i) Understanding the impact of natural conditions on human activities, on one hand, and the different ways of creating environments according to differing cultural values, religious beliefs, technical, economic and political systems, on the other, etc.

(ii) Skills of using communication, thinking, practical and social skills to explore geographical topics. This involves use of these skills at a range of scales from local to international, etc.

(iii) Developing attitudes and values to dedication in order to seek solutions to local, regional, national and international problems at the basis of the 'Universal Declaration on Human Rights'.

The International Charter on Geographical Education, 1992 (International Charter on Geographical Education, 2016) also states, "The more knowledge available in the hands of educated people, the greater the chances are of significantly reducing environmental damage and preventing future problems. Accordingly, there is a primary need to strengthen in all countries, especially the developing ones, their entire educational system as a prerequisite to environmental and development education. Geographical Education contributes to this by ensuring that individuals become aware of the impact of their behaviour and that of their societies, have access to accurate information and skills to enable them to make environmentally sound decisions, and to develop an environmental ethic to guide their actions".

Conclusion

The strategic approaches devised during Incheon Declaration are—strengthening policies, plans, legislations and systems; emphasising equity, inclusion and gender equality; focusing on quality and learning; promoting lifelong learning and addressing education in emergency situations.

In lieu with these approaches, geography can be regarded to have interdisciplinary qualifications, which shall be developed in collaboration with other subjects. This interdisciplinary approach helps to perceive problems and phenomena from different perspectives, and to relate local experiences to global phenomena (Haubrich, 2007). In this course, the focus of action should be at all levels, macro, meso and micro, depending on the need and type of action required at each level. Apart from the existing sub-disciplines of physical and human geography, Geographical Information Systems (GIS) and critical cartography with environmental issues and political concerns can be effectively used in designing and reaching the strategies. By integrating new technologies with creative imaginations, geographers and geography educators can provide more innovative and globally relevant perspectives about SD. Studies across the world (O'Grady, 2023; Miseliunite, et.al. 2022 and Muller, 2021, et.al.) have shown the importance of education and transformations done towards achieving sustainable development.

In India, for example, NCERT has devised some strategies for inculcation of the concept of SD through the schools and the pedagogy. It suggests that the evaluation of children's awareness, sensitivity and skills on sustainability concerns need to be observed holistically during the teaching-learning process, i.e.,

while they are involved in various activities. These features can be reported qualitatively. The inclusions of captions like to do, activity, assignment and projects. The strategy is developed to help the schools and its students understand, imbibe and practice environmentally sustainable behaviour. The enabling environment for such activities needs to be created by the teachers (Resource Book, 2015). To carry out the activities, teachers are expected to help design appropriate learning situations. Activities and projects are suggested learning situations for students to carry out and work towards accomplishing the ESD objectives. This accomplishment can be done by enabling children to use appropriate skills to take necessary action on environmental, economic and social issues, which are intertwined with various activities of life. Such practices need not be viewed in isolation as sustainable development needs to address all these aspects of a better quality of life.

Majority of the existing curriculum in India are so well designed that a gap exists between the classroom teaching from books its practice in the real life. The evaluations are done based on the marks fetched or grades, depending upon the number of answers reproduced by the student in the exams. This gradually develops disconnect between the things studied and its practice or the actual environment. This suggests a need to reorient the curriculum by de-emphasising mechanical reproduction of information and data towards including various methods of learning. Such methods can be observing, critical thinking, and examining and generating knowledge on their own. This can be called 'greening' (Resource Book, 2015) of curriculum. It means learning about the environment, learning through the environment and learning for the environment. The perspective of sustainability can be addressed through curriculum by naturally bringing the students closer to their surrounding world so, they can respond to the needs of their socio-economic and cultural set-up. Geography textbooks of published by NCERT, have also tried to inculcate environmental and sustainability approach from Class VI, itself (The Earth Our Habitat, 2019).

The environment and social norms are dynamic in nature. A holistic approach by integrating disciplines with the social, cultural, economic, environmental, political and technological dimensions has to be done at various stages of education. It should go beyond the mere dissemination of information so that the students can relate to the concepts, themes and topics step-by-step from lower stages to higher stages. For example, at the primary stage, if students are introduced to the concept of land where human beings live, build houses, grow plants and trees and cultivate crops. At the secondary stage, they should be taught about soil, their types, distribution, layers

and fertility, linking it with the earlier information. The concept of conservation of soil can also be introduced in a brief manner. Here, student can be made to understand how soil is related to other things in the environment around us. Simultaneously, teaching methods by practically showing soil, types of soil and how plants hold the soil can be adopted. This can be accompanied with some projects for the students where they gather information and display their finding.

Newer and innovative tools like videos, interactives, puppets and moppets can also be used for disseminating information in a child-friendly manner at primary and secondary stages. If soil conservation is practiced anywhere in the world they should be told about it so they can relate it to the actual world. Nature walks at all stages have been found beneficial. It includes visit to forest areas, open spaces, parks, gardens and the surrounding environment. While doing so, the health, hygiene and safety of students should be of prime importance.

Then, at higher secondary stage, the information about how soil gets formed, how much time does it takes to form soil, soil as a resource, conservation of soil and likewise, can be taught. Some group activities and workshops can be introduced related to the topic. Here, the interdisciplinary aspects can be introduced, which should be delivered while explaining the topic in discussion. At under graduation and above stages a detailed account of the above concepts can be given by further involving the advanced techniques involved in the study of soil. The social, cultural, economic and political dimensions should be explained through technological involvement.

Another strategy suggested to assimilate the concept is the emphasis on cooperative learning. This practice needs to be included in the formal education system at various stages. Cooperative learning is the teaching technique that involves students' participation in group learning. In this, small teams should be formed encouraging positive interactions between them regarding any topic. Care should be taken to create teams of students of diverse abilities to understand subject in various manner and in a better way. This will help in inculcating cohesive values among them. This will also help in developing a habit of efficient utilisation of the available resources and decision-making.

The SDGs through education also encompass infrastructural development in educational institutions through a transformative change (Grin John, Rotmans Jan and Schot Johan, 2011). The indicators of evaluation of the strategy as discussed in previous section on education also include such indicators. This includes availability of trained teachers, trained teacher and student ratio, availability of all-weather building, toilets, implementation of various programmes like Mid-day Meal (MDM) in schools, scholarships

and various teaching-learning aids. The MDM in itself is believed to have immense scope of imparting awareness about environment and the human-environment relationship. The whole idea of sitting together with diverse backgrounds and having the same food encourages a feeling of togetherness in children. While teaching, the discussions can be made on food items used in the MDM vis-a-vis who grows them, where are they grown, seasonal variation in the food items served and how much effort has been put in reaching the food to the plate. A feedback from students about such availability of resources and their utilisation can be helpful in assessing the present situation and the scope of further improvement.

All the above explanations take us to an understanding that apart from devising what can be done for a SD, effort should also be to explore and understand how SD is practiced around the world. Such efforts can make geography a subject look more approachable beyond the rhetoric of discussions. It has to be understood that the concept is not merely an extra burden of subject or topic on students but, it has been a part of the very lifestyle in some of the societies and can be adopted in our lifestyle as well. It is a way of living that takes human beings towards achieving a better well-being.

References

Ali S.M. 1983. *The Geography Of The Puranas.* People's Publishing House. New Delhi.

Bamber, Philip (Edited). 2020. Teacher Education for Sustainable Development and Global Citizenship: Critical Perspective on Values, Curriculum and Assessment. *Routledge, Taylor & Francis Group. New York.* https://library.oapen.org/bitstream/handle/20.500.12657/52768/9780429762833.pdf?sequence=1

Dreze, Jean and A. Sen. 2002. *India Development and Participation.* Oxford University Press. New Delhi.

Education for sustainable development. http://en.unesco.org/themes/education-sustainable-development

Gregory Derek et al. (Edited). 2009. *The Dictionary of Human Geography,* 5th Edition. Wiley Blackwell. United kingdom.

Grin, John, Rotmans, Jan and Schot, Johan. 2011. Transitions to Sustainable Development: New Directions in the Study of Long Term Transformative Change. Routledge, New York.

Harvey, David. 1996. *Justice, Nature & the Geography of Difference.* Blackwell Publishers. New York.

Haubrich, H., S. Reinfried and Y. Schleicher. 2007. Declaration on Geography Education for Sustainable Development (Version of April 22rd). http://igu-cge.tamu.edu/Declaration.pdf

Inernational Geographical Union. 2016. International Charter on Geographical Education, IGU UGI. https://www.igu-cge.org/wp-content/uploads/2019/03/IGU_2016_eng_ver25Feb2019.pdf

Miseliunaite B., I. Kliziene and G. Cibulskas. 2022. Can Holistic Education Solve the World's Problems: A Systematic Literature Review. *Sustainability 2022*. 14 (15). 9737; https://doi.org/10.3390/su14159737

Muller, Ulrich, R. Hancock, D., T. Stricker and C. Wang. 2021. Implementing ESD in Schools: Perspectives of Principals in Germany, Macau and the USA. *Sustainability*. 13(17). 9823. https://doi.org/10.3390/su13179823

National Council of Education Research and Traning. 2015. *Towards a Green School On Education for Sustainable Development for Elementary Schools. Resource Book.* http://www.ncert.nic.in/departments/nie/dee/publication/pdf/Towards%20A%20green%20School.pdf

———. 2019. *Social Science, The Earth: Our Habitat.* Textbook in Geography for Class VI. New Delhi.

O'Grady, M. 2023. Transformative Education for Sustainable Development: A Faculty Perspective. *Environ, Devlopment and Suastainability*. https://doi.org/10.1007/s10668-023-03609-y

Report of the World Commission on Environment and Development: Our Common Future. 1987. https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

Report of the United Nations Conference on the Human Environment. Stockholm, 5–16 June 1972. New York. http://undocs.org/en/A/CONF.48/14/Rev.1

Report of the United Nations Conference on Environment and Development. Rio de Janeiro. 3-14 June 1992. (1993). Volume I, United States, New York, https://documents-dds-ny.un.org/doc/UNDOC/GEN/N92/836/55/PDF/N9283655.pdf?OpenElement

Sauve L. 1996. Environmental Education and Sustainable Development: A Further Appraisal. *Canadian Journal of Environmental Education*. 1. Spring. https://files.eric.ed.gov/fulltext/EJ540073.pdf

Tilbury Daniel, B. Robert Stevenson et al. (Edited). 2002. *Education and Sustainability Responding to the Global Challenge.* IUCN. Belgium. 2002. https://portals.iucn.org/library/sites/library/files/documents/2002-002.pdf

Validiya, K.S. 2012. *Geography, People and Geodynamics of India in Puranas and Epics A Geologist's Interpretation.* Aryan Books International. New Delhi.

Vare Paul, Scott William. 2007. Learning for a change: Exploring the Relationship between Education and Sustainable Development. 1, 2. *Journal of Education for Sustainable Development.* Sage Publications. https://doi.org/10.1177%2F097340820700100209

UNESCO. 2015. Education 2030, Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4. 76–81. http://www.uis.unesco.org/Education/Documents/incheon-framework-for-action-en.pdf

———. Leading, SDG 4, Education 2030.http://en.unesco.org/education2030-sdg4

———. 1978. Intergovernmental Conference on Environmental Education, Toilisi, USSR, October 1977. final report. Paris. https://unesdoc.unesco.org/ark:/48223/pf0000032763

United Nations. 1992. Agenda 21. United Nations Sustainable Development. United Nations Conference on Environment & Development Rio de Janerio, Brazil, 3–14 June 1992. https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf