

‘CONTEXT ‘TO ‘TEXT’ – EXPLORING THE ROLE OF EVS CURRICULUM IN PROMOTING THE SUSTAINABLE DEVELOPMENT GOALS

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Received: 04 Jun 2021

Accepted: 14 Jun 2021

Published: 19 Jun 2021

ABSTRACT

The Sustainable Development Goals (SDGs) were declared at the United Nations Conference on Sustainable Development in 2015 as part of agenda 2030 with an aim to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing by the planet Earth and humanity. All 17 Goals are interconnected and covers all aspects i.e. socio economic and environmental dimensions of sustainable development. Goal 6-Clean Water and sanitation is one of the important SDGs. Billions of people in the world, mostly in rural areas, still lack the basic facilities of clean water and sanitation leading to a massive global water crisis. The right to health which is widely recognized by UN member states, is dependent on other human rights, including the rights to safe water and sanitation. Education at all levels play a crucial role in realising these goals and an integrated approach is much needed in Education for sustainable development (ESD). EVS curriculum at primary level has been recognised to play a key role to appreciate, adapt, and contribute to the development of a multidisciplinary perspective of the environment in young learners. As per NCF 2005, the EVS curriculum is presented in a thematic manner to develop an integrated and holistic understanding. This paper explores how these Global Goals are contextualized in the Indian curriculum and how the textbooks designed at the national level portrays the SDGs sequencing from local to global for experiential learning. The objectives of this paper are-- to explore the scope of ‘Sustainable Development Goals’ in EVS curriculum in the primary stage, to understand how the role of the Environmental Studies textbook (NCERT) is reflected for achieving the goals of sustainable development and, to explore various scope in the ways textbooks empower the learners to reflect on their actions accounting current and future environmental impacts. And to understand how the textbooks give directions to encourage the children to act in a sustainable manner. The qualitative research focused on exploring the scopes the Environmental curriculum has to offer in regard to promoting learning objectives of UN Sustainable Development Goal-6 ‘Clean Water and Sanitation – ensure availability and sustainable management of water and sanitation for all’. It followed the methodology of document analysis, studying the content given in EVS primary grade textbooks as the secondary data and mapping with the cognitive and affective aspects of SDGs..The study suggests how the UN Sustainability Development Agenda, which is inherently global in nature can be transacted at the micro level and EVS textbooks as the key resource for knowledge transmission can penetrate the child's milieu to sensitize them at their crucial and receptive age of primary grades.

KEYWORDS: Sustainable Development Goals (SDGs), EVS Curriculum

INTRODUCTION

In a landmark step in 2015, the UN General assembly adopted the Agenda 2030 for Sustainable development whose core is a set of 17 interwoven goals called as Sustainable Development Goals (SDGs) as a blueprint for a better and sustainable future for all. ‘The aim of SDGs is to secure a sustainable, peaceful, prosperous and equitable life for everyone now and in future’(UN 2015). Of these 17 important goals, Goal no: 6 is regarding clean water and sanitation as access to clean water and sanitation facilities has been recognised as a basic human right by UN in the convention of SDGs. Goal 6 states – “Ensure availability and sustainable management of water and sanitation for all”(UN SDGs2015). The goal seeks to ensure safe drinking water and sanitation for all with a focus on the sustainable management of water resources, wastewater, and ecosystems. The goal has eight targets to be achieved by at least 2030 which include “safe and affordable drinking water, end open defecation, provide access to sanitation and hygiene, improve water quality, waste water treatment and safe reuse, increase water use efficiency and ensure fresh water, implement integrated water resource management, protect and restore water-related ecosystems”(Targets Goal 6 UN report on SDGs 2015).Water and sanitation are at the core of sustainable development, Presently water scarcity is affecting more than 40 percent of people. At present thirty percent lack access to drinking water and sixty percent lack access to sanitation facilities. Each day, nearly a thousand children die due to preventable water and sanitation-related diarrheal diseases. Safe and affordable drinking water for all by 2030 requires investment not only in infrastructural and sanitation facilities but also in education and awareness.

Education is one of the key elements which would play a pivotal role in achieving these targets and goals by 2030.”Education can and must contribute to new vision of sustainable global development” (UNESCO 2015). The role of ESD is reiterated in the SDGs as part of Target 4.7 of the SDG on education, together with Global Citizenship Education (GCED).“By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development”(Target 4.7 : United Nations Report on SDGs, 2015.)“For this ESD needs be integrated in all curricula of formal education, starting from early childhood care and education, primary and secondary education, technical and vocational education and training (TVET) and higher education. ESD can equip learners with the specific cognitive, socio-emotional and behavioural learning outcomes that enable them to deal with the particular challenges of each SDG” (UNESCO report 2017).Therefore it is not only to important to include SDG-related contents in the curricula, but also to use transformative pedagogical approaches. The present study explored the cross curricular linkages in the primary Environmental Studies (EVS) Curriculum as prescribed by NCF 2005 and mapped the learning objectives recommended for attainment of SDG goal 6 –Water and sanitation with the concepts and topics presented in the NCERT text books of EVS. The paper presents the detailed analysis of mapped content in the light of the various objectives and tenets of SDG of Clean water and sanitation for all. The study suggests how the UN Sustainability Development Agenda, which is inherently global in nature, can be transacted at the micro level. The paper also discusses how the EVS curriculum designed at the National level representing cultural, geographical, and sociological diversity of India offers scope to learners coming from different socio-cultural backgrounds to connect and make linkages with the SDG 6 – Clean water and sanitation

Research Focus

As discussed earlier, education to be relevant and meaningful needs to focus on an integrated approach of sustainable development. EVS curriculum at primary stage has been recognised to play a key role to appreciate, adapt, and contribute to the development of a multidisciplinary perspective of the environment in learners. It encompasses the study of environment in an integrated manner from the perspectives physical, socio-cultural, biological, and historical aspects. The EVS textbooks at the primary level are woven around six major themes identified and recommended by the NCF 2005. The EVS curriculum is presented in a thematic manner to develop an integrated and holistic understanding can offer to inculcate reflective learning, critical thinking, and constructively generated knowledge by providing space for hands-on activities The study explores the scope of integrated SDGs in the textbook and brings them to the frontline explicitly. The study discusses how these global goals are contextualized in the Indian curriculum and how the textbooks designed at the national level portrays the SDGs sequencing from local to global for experiential learning.

The Following Research Questions Formed the Premise of This Paper

- In what ways does the EVS curriculum offer content which provides the learners with a local to a global perspective on sustainable development goals?
- In what ways the textbooks empower the learners to reflect on their actions accounting for current and future environmental impacts?
- How these textbooks give directions to encourage the children to act in a sustainable manner?

The methodology involved in depth content analysis of EVS Textbooks designed by NCERT (as per NCF2005) and mapping these concepts and content areas with the three domains of learning objectives specified to attain Goal 6. The UN has categorized these learning objectives under, cognitive, socio-emotional, and behavioural learning objectives, as given below:

Table 1: Learning Objectives for SDG 6 “Clean Water and Sanitation”

Cognitive Learning Objectives	Socio Emotional Learning Objectives	Behavioural Learning Objectives
“The learner understands water as a fundamental condition of life itself, the importance of water quality and quantity, and the causes, effects, and consequences of water pollution and water scarcity.” “The learner understands that water is part of many different complex global interrelationships and systems”. ” The learner knows about the global unequal distribution of access to safe drinking water and sanitation facilities”. “The learner understands the concept of “virtual water””. “The learner understands the concept of Integrated Water Resources Management (IWRM) and other strategies for ensuring the availability and sustainable management of water and sanitation, including flood and drought risk management”.	“The learner is able to participate in activities of improving water and sanitation management in local communities”. “The learner is able to communicate about water pollution, water access and water saving measures and to create visibility about success stories”. ” The learner is able to feel responsible for their water use”. “The learner is able to see the value in good sanitation and hygiene standards”. “The learner is able to question socio-economic differences as well as gender disparities in the access to safe drinking water and sanitation facilities”.	“The learner is able to cooperate with local authorities in the improvement of local capacity for self-sufficiency”. “The learner is able to contribute to water resources management at the local level”. “The learner is able to reduce their individual water footprint and to save water practicing their daily habits”. “The learner is able to plan, implement, evaluate and replicate activities that contribute to increasing water quality and safety”. “The learner is able to evaluate, participate in, and influence decision-making on management strategies of local, national, and international enterprises related to water pollution”.

Source: ESD, UNESCO, 2017.

DISCUSSIONS

The three domains of learning objectives provided the framework for analysis. The NCERT Curriculum in the primary level is around six themes out of which one theme is 'Water'. Apart from this theme, content in other themes also addresses some issues pertinent to the learning objectives. The table no 1 shows preliminary data of the chapters integrated with SDG;6, 'Clean Water and Sanitation' in the primary grades (III, IV, V) following a thematic organization of the contents.

The cognitive learning objectives for SDG 6 "Clean Water and Sanitation", states, "1. The learner understands water as a fundamental condition of life itself, the importance of water quality and quantity, and the causes, effects, and consequences of water pollution and water scarcity". The NCERT EVS textbooks help to attain this learning objective by including chapters like 'Poonam's Day Out' in grade III. It gives us a gist of multiple usages of a single water body. Similarly, in chapter-3, 'Water O' Water' by Shri Prasad, presents the usage of water, its forms, and misfortunes caused by water bodies in a poetic manner. For instance, (forms, misfortunes) the remaining 3.5% of fresh water is locked up in ice caps "somewhere it is snow, steam is also water as you know, water has forms so many..". The chapter also hints toward the tragedies caused by water, stating "Life on earth it has brought...But when the water breaks in floods, Great misfortunes it always works." such as melting of ice, heavy rain, etc., causes a rise in the sea level to an altitude resulting in natural disasters.

It is estimated that by 2050 more than a quarter of the world's population will experience severe water scarcity..Indian cities Bengaluru, Delhi, Chennai are among the 21 big cities facing extreme water stress. The NCERT EVS textbook of IV grade shares significant stories of the water crisis in chapter-17 and 18. 'Nandita in Mumbai' and 'Too Much Water, Too Little Water' both the chapters depict the uneven distribution of water between socio-economic classes. For instance chapter-17, under the section 'Water Water' describes the lives of people living in Mumbai slums and their struggles to access water. Stating, "Mami, Seema, and I get up at 4 o'clock every morning and go to the public-tap to fill water". Similarly, in the next chapter, there is an incident shared from Bazaar Goan, Maharashtra stating, "The women replied angrily, "You ask what is the matter? Our wells have no water. We get our water only when the tanker comes once a week... And here, there is so much water everywhere-just for you to play and enjoy." In both cases, we see the scuffle with the distribution of an essential resource like water. This helps the readers achieve cognitive learning objectives 1 and 3 under Goal 6 proposed by the UN, "3.The learner knows about the global unequal distribution of access to safe drinking water and sanitation facilities." This unequal distribution can often lead to disputes or conflicts over these water bodies as clearly visible in the above-shared stories. The activities and questions in these chapters help in addressing socio emotional objectives 1 and 3 listed in table 1.and encourage learners towards behavioural objective 1 and 3 listed in Table 1.

It would be wrong to assume that this water crisis is only a problem existing in densely populated urban areas. Due to the rapid growth of food production in agriculture and in industries, water in many rural areas a critical factor. Nearly 80 percent of India's fresh water is used in agriculture, using at least twice the amount of water to grow one unit of food through tube wells extracting 63 percent of the groundwater for irrigation. The state of Rajasthan is one of the drought-prone areas in India. The NCERT EVS textbooks of grades III and V include chapters which let us peep into the situation. They share the extreme challenges faced by women to travel miles for hours in order to fetch water. The state is semi-arid and faces acute water scarcity due to erratic monsoons overexploited groundwater resources.. It has led to the

state having an immense range of ancient and ingenious water harvesting systems, like the famous johads or step wells managed by communities. These methods have been briefly shared in chapter-6 of grade V, 'Every Drop Counts'. These methods can be useful in achieving, Target 6.5 of UN Goal 6: "By 2030, implement integrated water resources management at all levels, including through trans boundary cooperation as appropriate". The chapter also glorifies religion-traditional customs of celebrating water bodies. Hence this chapter reflects cognitive learning objective 5, socio emotional objectives 2 and 5 and behavioural objective 2 listed in table 1

The chapter-18, 'No place for us' alluringly represents the story of Jatyrbhai and his story of displacement. Stating, "They (government officials) said, "Villages on the bank of the river would have to be removed... They will have everything there- a school, electricity, hospitals, buses, trains, etc." But the chapter ends with, "In this big city, is there even a small place for my family to stay?" proving that these promises hardly ever meet with reality. This chapter reflects cognitive learning objectives 2, 3 and 5 listed in table 1. Various global and National reports suggests that India, and other developing countries in Asia and Africa, can address water scarcity and water poverty by adopting integrated water resources management for management of water resources and addressing water scarcity.

Highly polluted water bodies are affecting the economically disadvantaged groups most and they are losing the capacity to safeguard health. Chapter-13, 'a River's Tale' of grade IV discusses the crucial and sensitive topic of water pollution. The illustrations alone explain how the moment a water body comes in contact with humans in some way or others it gets polluted. From raw sewage, industrial wastewater to the fusion of metals and chemicals, water bodies are contaminated in many ways. However, the chapter also directs our attention towards water-borne diseases, stating, "There are many things that dissolve easily in water. Some of these can be harmful for our body." When the source of drinking water supplies is polluted itself then it leads to adverse health effects. This chapters help the learners achieve cognitive learning objective 1, socio-emotional learning objectives 2,4 and 5 and encourages for behavioural objective 2 and 4 listed in table 1.

Clean water is the basic need of the human beings. Access to clean water is also the right to an adequate standard of living. In the NCERT EVS textbook of grade IV, chapter-18, 'Too Much Water, Too Little Water' states, "These days we are not getting water that is fit for drinking. It does not even look clean... We do not have a choice, so we drink it." Further in the chapter, under the section 'Can we drink this?' it has been shown which section of our society is more disadvantaged in terms of awareness and access to water. Stating, "Raziya called out, "Pushpa, it says in the newspaper that the gutter water has got mixed with the water in the drinking water pipes, in this area. It says that many people are sick with diarrhoea and vomiting because of this." Towns and cities across India dump untreated domestic waste directly into the rivers. In many areas, drinking water that is not properly treated or that travels through an improperly maintained distribution system (pipes) creates conditions that increase the risk of contamination. The chapter also suggests home-made remedies to deal with dehydration and diarrhoea. Hence this chapter helps in attaining Cognitive learning objective 1, socio emotional objectives 4 and 5 and behavioural objective 4 listed in table 1.

As per 2011 census 18.6 percent urban households and 69.3% rural households were without toilets. Open defecation is a major public health hazard, especially for children who are at risk of catching deadly diseases like diarrhoea, dysentery etc. The chapter-5, of the NCERT EVS textbook of grade III, also mentions Swachh Bharat. The lesson, 'Chhotu's House' talks about toilets being a part of the house. It states, "Billu: I do not know how to use the toilet

properly.” The statement is very strong in proving some points such as access to toilets alone does not mean the end of open defecation as the officials claim. An unclean toilet, unawareness of how to use it, scarcity of water in that area, and many other reasons make it worse than having no toilet. No schemes have been planned for this, and clean water and sanitation still remains a local issue. Therefore, it is appreciable of the textbook to include a chapter that educates its reader and instructs about toilet training. The chapter-17 of grade IV, ‘Nandita in Mumbai’ helps us understand and look at this issue from a gender lens. Stating, “.. There is a toilet at one end. Everyone in the street uses that toilet. It is always very dirty and smells so bad... At times, there is no water. We have to take our water with us... In the village, people go to the open places or fields for toilet. The men and women go to different places.” Nandita’s experience of Mumbai supports the argument we had above. On the other hand, open defecation for women also exposes them to the danger of physical assaults and rape as they often have to wait till dark to relieve themselves. Therefore, safe drinking water and hygienic toilets not only protect people from disease but are one of the necessities. Hence one can say that both these chapters help in achieving socio emotional objectives 4 and 5.

Table 2: Mapping of Chapters of EVS Curriculum (NCERT) for SDG 6

Tables No	Themes	Grade III	Grade IV	Grade V
1	Water	chapter-1 “Poonam’s Dayout” Chapter-3 “Water O’ Water” Chapter-20 “Drop by Drop” Chapter-5 “Chhotu’s House”	Chapter-13 “A River’s Tale Chapter” Chapter-18 “Too Much Water, Too Little Water” Chapter-17 “Nandita in Mumbai”	Chapter-6 “Every Drop Counts”
2.	Family and Friends	Chapter-3 Water O’ Water Chapter-20 Drop by Drop	Chapter-12 Changing Times Chapter-17 Nandita in Mumbai Chapter-22 The World in my Home	Chapter-6 Every Drop Counts Chapter-16 Who Will Do this Work

Theme-Water

Theme - Family and Friends

Under this theme, the sub-theme, ‘Work and play’ provides the teacher with the opportunity to discuss different occupations, work inside and outside home, gender, and caste stereotypes. The following analysis of chapters would assist the readers to attain one of the socio-emotional learning objectives 5. The NCERT primary grade EVS textbooks do not shy away from providing a huge opportunity for the teachers to sensitize and discuss with learners about caste discrimination. For instance, chapter-3 of grade III, ‘Water O’ Water’, states “In many places, certain people are not allowed to take water from the common source. It is important to discuss this so that children are sensitized towards issues like discrimination.” The Constitution of India under Article 15(b), “No citizen shall, on grounds only of religion, race, caste, sex, place of birth or any of them, be subject to any disability, liability, restriction or condition with regard to the use of wells, tanks, bathing ghats, roads, and places of public resort maintained wholly or partly out of State funds or dedicated to the use of the general public.” The inclusion of these sections on water and discrimination signals that these practices are still evident in many places around the world and in India. To support this argument, the textbook includes a section, ‘This is how we get water’ in chapter-6 of grade V, ‘Every Drop Counts’.

At many unfortunately manual scavenging is still practised and there is an increase in the death rates of people cleaning sewers and septic tanks. Moreover, these people are unaware of their right to refuse to do this role, and those few who refuse are faced with extreme consequences of unemployment, poverty and hunger. There is a whole chapter included on this issue in the EVS textbook of grade V. Chapter-16, 'Who will do this work?' shows real images of manual scavengers cleaning sewers. The lesson provides learners a scope to talk with the staff community and understand their work and life. Teachers can talk about other discriminatory practices such as 'untouchability' and develop sensitivity among their learners as the associated occupation reinforces the social stigma that they are unclean or "untouchable" and encourages widespread discrimination. So these chapters and topics can be used to address cognitive learning objectives 2 and 3, Socio emotional objectives 2,4 and 5 and behavioural objectives 3 and 4 of goal 6 listed in Table 1

As per UNICEF (2017)report women and girls spend 200 million hours every day collecting water. Further lack of access to water is disproportionately falling on women. This goal calls for "universal and equitable access to safe and affordable drinking water" by 2030. It is not a hidden reality that women in villages have to walk miles each day to fetch water-bearing serious impacts on their health and well-being. The textbook of grade III in chapter-20, 'Drop by Drop' states, "Every summer there is water scarcity in his place. Each day they spend hours just to get four pots of water. While walking on the hot sand their feet burn and blisters just cannot be avoided." This particular section is enough to explain the burden on women carrying the task of fetching water for regular household chores. "In India, on average, a woman travels, 8,700 miles a year to fetch water, carrying over 88 pounds of water daily to meet her family's needs." The picture becomes harsher when this woman's job of collecting water ignores their physical issues and health condition such as menstruation or pregnancy. Access to unsafe drinking water also results in the spread of water-borne diseases, and usually it is women who are the victims to both water scarcity and water pollution. Hence this discussion presented in the book addresses objective cognitive learning Objective 2, socio emotional learning objective 5 of goal 6 "Clean Water and sanitation".

CONCLUSIONS

Textbooks are an important resource for promoting Education for Sustainable Development and attaining SDGs especially at the school level. In the Indian context, text books play a pivotal role in representing diversity and provide inclusive contexts to sensitize learners. The paper discussed how textbooks can promote the ideas of Sustainable development goals and serve the purpose of education for sustainable development. Though the analysis of the scope of curriculum and textbooks was limited to SDG 6 i.e. Clean Water and sanitation, the curriculum at the primary level developed by NCERT offers wide scope to integrate majority of SDGs in a contextual manner Hence EVS curriculum offer content which provides the learners with a local to a global perspective on sustainable development goals. It is also found that these textbooks are providing opportunities to empower the learners to reflect on their actions accounting for current and future environmental issues and can give directions to the children to act in sustainable manner. EVS textbooks as the key resource for knowledge transmission penetrate the child's milieu to sensitize them at their crucial and receptive age of primary grades. Teachers need to use these textbooks in a creative manner and expand on the contexts given in the curriculum to attain the vision of agenda 2030 by incorporating the objectives of SDGs in transformational pedagogy.

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