

Sikkim Initiatives in Incorporating Education for Sustainable Development (ESD) and Learning Outcomes in the Textbooks at Primary level

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Abstract- *Development of Education for Sustainable Development (ESD) and Learning Outcome integrated textbooks has been the major concern and discussion for the educational agencies and institutions both at the national and international level. The vital focus is to prepare our children to meet the future challenges of environment, society, and economy leading towards sustainable learning and living. Sikkim has been following the National Council of Educational Research and Training (NCERT) curriculum from Class VI onwards, however, textbooks upto Class V are developed by SCERT-Sikkim. Thus, in keeping with national and global aims for sustainable learning and living, in 2017- 2018, SCERT Sikkim initiated the task of embedding ESD and Learning Outcomes in its textbooks at the primary level for all government schools. Selected school teachers and teacher educators of the state were involved in the process of writing the new textbook. The new textbooks are in alignment with the Learning Outcomes of the NCERT, (2017) and the integration of ESD for the implementation of UN's 2030 agenda for sustainable development goals of education for peace and sustainable development. The paper tries to discuss the textbook imbibing Learning Outcomes and ESD elements with exemplar from the chapters of EVS textbook. The paper further discusses the student's involvement in the teaching-learning process rather than teacher directed classroom. The paper has two sections. The first section gives an insight into the textbooks- its theme, sub-themes, and syllabus. The second section will share an exemplary chapter showing how learning outcomes focus on learner and guide teacher to design the pedagogy and assessment.*

Keywords: Learning, Outcomes, Textbook, Education, Sustainable, Goals, Students.

Introduction

The Sikkim new textbook is written by involving the team of school teachers, faculty from DIETs and SCERT of Sikkim with academic support from Mahatma Gandhi Institute of Education and Peace under UNESCO and Azim Premji University, Bangalore. The process of newly revised textbooks has been undertaken by the State Council of Educational Research and Training (SCERT), Sikkim at the primary level (Classes I –III) under the aegis of the Human Resource Development Department during the year 2018. The process of writing textbooks was done in three phases which involved a lot of exercises:

- Phase 1 –This phase included the orientation of textbook writers.
- Phase II – In the second phase, the writers were involved in the selection of ESD themes, topics and aligning with learning outcomes developed by NCERT.
- Phase III- Development of content, aligning with ESD goals and Learning Outcomes.
- Phase IV- Finalization with Illustrators.

This Textbook will be first piloted in 40 selected schools wherein the teachers will be given orientation cum training. The revised textbook is the successful outcome of contribution and initiative of Education for Sustainable Development by UNESCO and Learning Outcomes of NCERT.

Education for Sustainable Development (ESD) allows every learner to acquire the knowledge, skills, attitudes, and values necessary to shape a sustainable future. Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development. The United Nations have declared to achieve 17 Sustainable Developments Goals by 2030. Some of the sustainable goals are no poverty, zero hunger, good health and well-being, quality education, gender equality etc. There are also 11 indicative lists of ESD competencies which needs to be embedded in the textbooks like Acquiring Knowledge, solving (issues, problems, conflicts), Thinking Critically, dealing with System, changing perspective, Communicating and negotiating, Facing the future, reflecting on values, Participating and collaborating, Thinking and acting inclusively, Showing solidarity and responsibility.

This 11 indicative list of ESD competencies will also help in achieving the learning outcomes of NCERT. The Learning Outcomes also expect the learner to develop the knowledge or skills by the end of a particular assignment, class, course, or program, and help students understand why that knowledge and those skills will be useful to them. Both ESD and Learning Outcomes focus on the context and potential applications of knowledge and skills, help students connect learning in various contexts and help guide assessment and evaluation. Hence the newly revised textbooks of Sikkim for EVS have incorporated the Education for Sustainable Development which has further helped in achieving the learning outcomes of NCERT.

Objectives

To study the process of incorporating ESD and Learning Outcomes in the textbooks at the primary level for all Government schools in Sikkim.

Sikkim EVS Textbook

The Sikkim new textbook is the outcome of the initiatives from the scholars of different organization and dedicated team of textbook writers from the State. The content in the book has been carefully built around children's age-appropriate abilities to enable them to understand, explore and connect to their immediate environment. The EVS syllabus has been

represented in the form of four themes – Family and Friends, Food and Water, Clothing and Shelter, Travel and Places. These themes have been drawn from elements common to social studies, science, and environmental education. Each theme has several sub-themes from which chapters have been developed. The important and unique features of the textbook are the incorporation of Education for Sustainable Development (ESD Elements) and Learning Outcomes. Besides incorporating ESD issues, a conscious effort has been made to avoid giving direct information or definitions but situations have been created for children to construct their own knowledge through observation, interaction, and discussion with peers and elders. Suitable examples have been drawn from the local context to enable the child to relate his classroom learning to real-life situations and experiences. The content in the book provides a lot of space for children to explore, understand concepts and does not advocate rote learning. Illustrations in the form of images and sketches have been included which not only make the book attractive but also contribute to the process of teaching-learning, making it effective, interesting, joyful and meaningful. The illustrations have been designed in such a way that they complement the spirit of the content. Varieties of activities are given in the book which provides opportunities for the child to work individually and in groups.

Another important inclusion is the Teacher's Notes which provide suggestions to the teacher and support her/ his pedagogy. The textbook also includes four Teacher's Pages, one each for every theme wherein a brief introduction to the chapters is included along with specific focus areas of each chapter. The rationale of including these pages was to provide the teacher with an overview of each theme. To ensure continuous and comprehensive evaluation in the teaching-learning process, inbuilt activities and questions have been incorporated. The objective of having in-built activities and questions in the book is not merely to evaluate the child's knowledge and experience but to provide opportunity and space to the children to express themselves. There are 13 chapters and some chapters with ESD competencies and principles are shown below:

Class III EVS Syllabus for Sikkim

Theme	Sub theme	Chapter	Syllabus	ESD Competencies
Theme 1 - Family and Friends	Family	Our Families	<ul style="list-style-type: none"> • To explore the variable nature of what a family is and how it can change with time and circumstances. • To appreciate that the sense of family and connectedness can extend to people who may not be relatives and to animals living close together. 	<ul style="list-style-type: none"> • Acquiring knowledge • Thinking critically and reflecting on values • Changing perspectives • Participating and collaborating • Thinking acting inclusively

			<ul style="list-style-type: none"> • To identify ways of caring and sharing within the family and appreciating qualities and skills and sometimes special needs of family members. 	
Theme 2- Food and water	Water	Water for everyone	<ul style="list-style-type: none"> • To find out where we get water from for use in the family, the school; observe the ways of storing it • To reflect on inequality in access to water in general and to safe drinking water • To be sensitive to the fact that water is needed by plants and animals and should be used carefully 	<ul style="list-style-type: none"> • Acquiring knowledge • Thinking critically and reflecting on values • Changing perspectives • Participating and collaborating • Solving issues, problems • Thinking and acting inclusively • Dealing with system
Theme 3- Clothing and Shelter	Shelter	Shelter and Buildings	<ul style="list-style-type: none"> • To observe different ways houses are made and materials used • To appreciate traditional forms of building in Sikkim and how the environment and availability of material have influenced this • To recognize other buildings which are used for public or community use 	<ul style="list-style-type: none"> • Acquiring knowledge • Thinking critically and reflecting on values • Changing perspectives • Communicating and negotiating • Facing the future • Thinking and acting inclusively
Theme 4 – Travel and Places	Places	Ukee's Town	<ul style="list-style-type: none"> • To develop an understanding of rural and urban life in a simple comparative manner 	<ul style="list-style-type: none"> • Acquiring knowledge • Thinking critically and reflecting on values • Solving issues, problems, conflicts

			<ul style="list-style-type: none"> • To observe the services being provided and the life of people who live in a village or town • To explore what kinds of work people do in a rural or urban area • To develop an understanding of the resources that sustain a village or a town • To recognize that many different types of people live in a big town like Gangtok; it draws people for work, study, medical services, business etc. 	<ul style="list-style-type: none"> • Participating and collaborating
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Embedding Education for Sustainable Development and Learning Outcomes
Theme-Food and Water

Exemplar Chapter -Water for Everyone

The chapter brings out the different aspects of water as an essential resource– its natural sources, storage, need by humans/plants/animals; its availability and shortage; its wastage and optimal use; also inequalities in sharing the water. The chapter contextualizes these issues by including the Dhara, the effect of landslides on water availability, the use of bamboos for storing/holding water in earlier times by the tribes in Sikkim and the importance of water for animals and providing them with the same.

LO1- Describes the availability of water and its uses at home and surroundings.

The learning indicator "describes" is the action verb which relates to the understanding level of the cognitive domain.

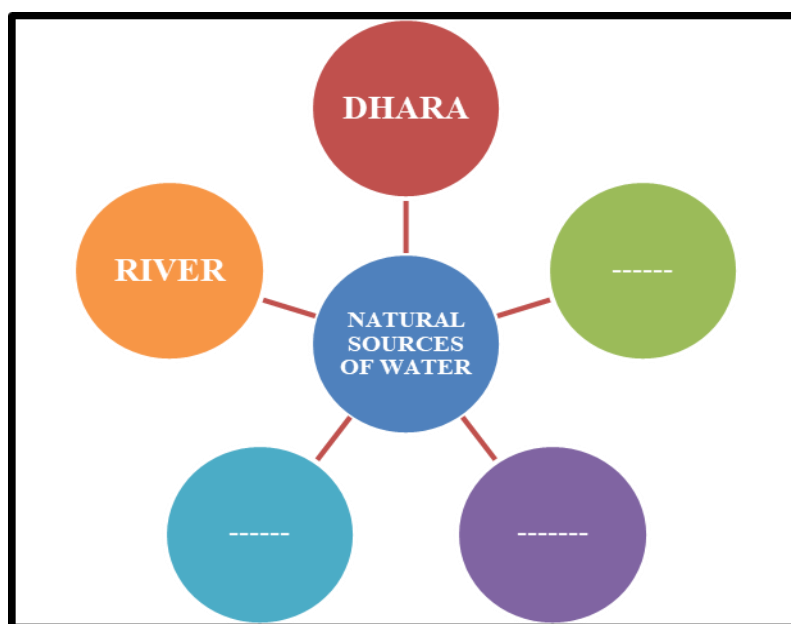
Activity: Doma's Story

(Sketch of Doma, a 12-year-old girl living in Gangtok - showing an area/Street with lots of buildings close to each other and people waiting in queue to fetch water) Let us read the story and find out where the water in Doma's house comes from.

Doma lives in Gangtok with her family in a rented house. Her family gets less water than the owner of the house. In tourist seasons, when there are lots more people visiting Gangtok, other local people also face the same problem. During this time water is supplied from the tap for only half an hour and everybody rushes to collect the water. The tap water

comes from Selep Tank which gets water from the nearby river with big underground metal pipes.

When there is no water from the tap she goes with her brother and friends to the nearby Dhara (natural stream) with a jerry can to bring water. This water is stored in a small tank. In Dhara, they have made a pipe out of bamboo to collect water. In Doma's story water comes from Dhara and the river to her house through tap and bamboo pipes. In the spaces in the picture below show where else can you get water from.



During rainy season even when there is a lot of water Doma and her family have to face water problem. The SelepTank gets less water due to landslide (Pairo). Sometimes the tap water also brings mud and sand.



Have you ever faced such a water problem due to the landslide in your area?

If yes, where do you go to get water when this happens?

(ESD competencies develop are Thinking Critically, Solving issues, problems, conflicts: The use of icons is also reflective of ESD aims as it directly aims students towards Critical Thinking and writing)



What are the other ways of making water safe to drink at home?

Teacher's Note: Children should be encouraged to share their ideas on the water tank in their locality like Selep Tank of Gangtok.

LO2- Guesses properties and estimates quantities

The learning Indicator "Guesses and Estimates" are also the action verbs which deals with the understanding level of the cognitive domain.

Activity: How much can a bottle hold?

You must be using different kinds of containers in your home. Can you bring two or three such containers to the class? You could bring a glass, a mug, a small bowl or your water bottle. Your teacher could bring a bottle from her home. With the help of your teacher fill your containers with water. Your teacher can bring a bottle from her home. Pour the water of your filled containers into the bottle. How many containers filled the bottle? Fill the table below

After the activity pour the water into the pots or plants in your school

(ESD competencies are Acquiring knowledge, Thinking Critically and Participating and Collaborating)

Teacher's Note: The teacher could adapt the activity according to the ability of the learners. This could form a good foundation in critical evaluation, calculation, and analysis.

LO3- Voices opinion on wastage of water

Name of the container	Number of containers needed to fill the bottle
Glass	
Mug	
Small bowl	
Water bottle	

The learning indicator "Voices Opinion" is also an action verb which deals with the highest level of cognitive level (create)

Activity: Wasting water ...waste waterwhat to do with used water

Look at the two pictures given below. In which of these do you think water is being wasted and why?

(Two Sketches – one with a bullock being washed by a child and an adult using a hose pipe; another of a bullock being washed by a child and an adult using a bucket of water)

Can you think of ways of saving water?

_____	_____	_____
_____	_____	_____

Have you seen water flowing unnecessarily in your home, school or any other places?
If yes, what do you do then?

(ESD competencies are Solving issues, problems, conflicts, Dealing with system)

LO4- Shows sensitivity for animals

Activity: Animals need water too!

Have you noticed that some animals also live with us inside or outside our house? In Phurba's house, they have a separate shelter for the cow to live. During day time, one of the family members always gives water to the cow in a bucket. (Sketch of Phurba giving water to animal)

Say/Tell and Write

a) Have you ever given water to any animals/birds? If yes, which animal?

.....

b) Some animals are not given water by anyone from where do they drink water?

.....

c) What would happen to plants and animals if they do not get water for a long time?

.....

(ESD competencies are Changing Perspectives and Thinking and acting inclusively)

Teacher's Note: Discuss the re-use of water. This would help children to understand the importance of saving water and can discuss wild animals drinking water from various places.

Conclusion

Quality in teaching and learning process at primary level has been a great concern nationwide and major quality interventions programs are launched to improve the education system and nurture sustainability ideas. The textbook is one of the fundamental tools to improve upon the quality in-terms of Learning Outcomes and to promote Sustainable Development among learners in their formative years. In this context, Sikkim has taken an initiative towards improving quality in education incorporating Education for Sustainable Developments with Learning Outcomes. Every creative composition always provides some scope for improvement. Therefore, these textbooks are open to reflections, valuable suggestions, constructive criticism and innovative ideas from all stakeholders.

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