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Lesson No.

2.1 : Reading and Reflecting on Texts

2.2 : Reflection on text books with respect
to gender, environment and health

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Structure of the Lesson

2.1.1 Objectives

2.1.2 Introduction

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2.1.1 OBJECTIVES

After going through this lesson learners will be able to:

- i. Know the concept of reading on text.
- ii. Recall the concepts of reading in Language, Science, Social Science and Mathematics.
- iii. List the importance of readings.
- iv. Give illustrations of different reading strategies.
- v. Build their capacities as readers and writers by becoming participants in the process of reading.
- vi. Plan the readings interactively – individually and in small groups.
- vii. Appraise the writings with a sense of purpose and audience, through tasks such as, responding to a text with one's.
- viii. Own opinions or writing within the context of other's ideas. assess over all areas of language proficiency that will lay a foundation for their becoming self-learners, reflective and expressive teachers.

2.1.2 INTRODUCTION

Reading" is the process of looking at a series of written symbols and getting meaning from them. When we read, we use our eyes to receive written symbols (letters, punctuation marks and spaces) and we use our brain to convert them into words, sentences and paragraphs that communicate something to us. Reading can be silent (in our head) or aloud (so that other people can hear).

Reading is a *receptive* skill - through it we *receive* information. But the complex process of reading also requires the skill of speaking, so that we can pronounce the words that we read. In this sense, reading is also a productive skill in that we are both receiving information and transmitting it (even if only to ourselves).

2.1.3 Importance of Reading

From time to time people have wondered why reading is important. There seems so many other things to do with one's time. Reading is important for a variety of reasons. We will look at some of those fundamental reasons below.

- I. Reading is fundamental to functioning in today's society. There are many adults who cannot read well enough to understand the instructions on a medicine bottle. That is a scary thought - especially for their children. Filling out applications becomes impossible without help. Reading road or warning signs is difficult. Even following a map becomes a chore. Day-to-day activities that many people take for granted become a source of frustration, anger and fear.
- II. Reading is a vital skill in finding a good job. Many well-paying jobs require reading as a part of job performance. There are reports and memos which must be read and responded to. Poor reading skills increases the amount of time it takes to absorb and react in the workplace. A person is limited in what they can accomplish without good reading and comprehension skills.
- III. Reading is important because it develops the mind. The mind is a muscle. It needs exercise. Understanding the written word is one way the mind grows in its ability. Teaching young children to read helps them develop their language skills. It also helps them learn to listen. Everybody wants to talk, but few can really listen. Reading helps children and adults focus on what someone else is communicating.
- IV. Reading develops the imagination. TV and computer games have their place, but they are more like amusement. Amusement comes from two words "a" [non] and "muse" [think]. Amusement is non-thinking activities. With reading, a person can go anywhere in the world...or even out of it! They can be a king, or an adventurer,

- or a princess, The possibilities are endless. Non-readers never experience these joys to the same extent.
- V. In line with the above, reading develops the creative side of people. When reading to children, stop every once in a while and ask them what they think is going to happen next. Get them thinking about the story. When it is finished, ask if they could think of a better ending or anything that would have improved it. If they really liked the story, encourage them to illustrate it with their own drawings or to make up a different story with the same characters.
 - VI. Reading is fundamental in developing a good self image. Non-readers or poor readers often have low opinions of themselves and their abilities. Many times they feel as if the world is against them. They can perform poorly in other subjects because they cannot read and understand the material. Often the reader tends to "give up."
 - VII. Good reading skills, especially in a phonics reading program, improve spelling. As students learn to sound out letters and words, spelling becomes easier. Also, reading helps to expand the vocabulary. Reading new words puts them in their mind for later use. Seeing how words are used in different contexts can give a better understanding of the word usage and its definitions rather than just the cold facts of a dictionary.
 - VIII. There is an old saying, "The pen is mightier than the sword." Ideas written down have changed the destiny of men and nations for better or worse. The flow of ideas cannot be stopped. We need to read and research to build on the good ideas and expose the bad ideas before they bring destruction. Only by reading can we be armed in this never-ending, life-and-death struggle.

2.1.4 Reading Techniques

1. Skimming

Skimming is sometimes referred to as gist reading. Skimming may help in order to know what the text is about at its most basic level. You might typically do this with a magazine or newspaper and would help you mentally and quickly shortlist those articles which you might consider for a deeper read. You might typically skim to search for a name in a telephone directory.

You can reach a speed count of even 700 words per minute if you train yourself well in this particular method. Comprehension is of course very low and understanding of overall content very superficial.

2. **Scanning**

Picture yourself visiting a historical city, guide book in hand. You would most probably just scan the guide book to see which site you might want to visit. Scanning involves getting your eyes to quickly scuttle across sentence and is used to get just a simple piece of information. Interestingly, research has concluded that reading off a computer screen actually inhibits the pathways to effective scanning and thus, reading of paper is far more conducive to speedy comprehension of texts. Something students sometimes do not give enough importance to is illustrations. These should be included in your scanning. Special attention to the introduction and the conclusion should also be paid.

3. **Intensive Reading**

You need to have your aims clear in mind when undertaking intensive reading. Remember this is going to be far more time consuming than scanning or skimming. If you need to list the chronology of events in a long passage, you will need to read it intensively. This type of reading has indeed beneficial to language learners as it helps them understand vocabulary by deducing the meaning of words in context. It moreover, helps with retention of information for long periods of time and knowledge resulting from intensive reading persists in your long term memory.

This is one reason why reading huge amounts of information just before an exam does not work very well. When students do this, they undertake neither type of reading process effectively, especially neglecting intensive reading. They may remember the answers in an exam but will likely forget everything soon afterwards.

4. **Extensive reading**

Extensive reading involves reading for pleasure. Because there is an element of enjoyment in extensive reading it is unlikely that students will undertake extensive reading of a text they do not like. It also requires a fluid decoding and assimilation of the text and content in front of you. If the text is difficult and you stop every few minutes to figure out what is being said or to look up new words in the dictionary, you are breaking your concentration and diverting your thoughts.

2.1.5 Strategies for Reading

The following strategies will help you maximize your comprehension and retain information while reading textbooks.

Reflect. From reviewing chapter headings, subheadings, bold or italicized words, ask yourself what you've already learned. Now as you read:

- ✓ Answer the questions you developed while previewing the text.
- ✓ Try and predict the answers to the questions and find out if your predictions are correct.
- ✓ Reading aloud improves comprehension and retention of information.
- ✓ Develop a picture in your mind of the concepts presented. Visualizing information, concepts or material presented make it much easier to remember.

Highlight. As you read through your text, highlight important passages that support central themes and concepts. Be selective. If you're highlighting more than 20% of a passage you're not being selective enough.

- ✓ As you read, try and identify important concepts and facts that could be likely test questions. Underline and identify these concepts.
- ✓ Circle with a pencil key terms and vocabulary. Write a short definition for each in your notes or in the margin of the textbook.
- ✓ Take well organized notes on the backside of your corresponding class lecture notes. This way your lecture notes and textbook notes for the same topic will be easy to access and review in preparation for the test.
- ✓ Make visual aids, including, picture, graphs, diagrams, or tables, to help visualize what you're reading. Visualization is a great way to take information that is complex or difficult and make it easy to understand and remember.
- ✓ Write a brief summary of the central themes and ideas in your notes. Being able to develop a summary of what you learned will help you master the material and retain the information.

After Reading

What you do after you read a text, can be almost as beneficial to learning and retention, as reading the text itself.

Recount. Once you've finished reading a text or passage, sit down with someone else and tell them what you read and what you learned from the text. Explaining aloud what you've learned from reading is arguably the most effective way to promote mastery of material and

improve retention. Joining a study group is a great way to have the opportunity to share with others what you've learned from your reading.

Review. review again! and again. Within a day of your initial reading, spend 20 to 30 minutes—depending on the amount of material covered—reviewing your notes and the information you learned, reciting the main points and topics. This will move the information from short-term to long-term memory. Each week spend about 10 minutes reviewing your notes and the highlighted parts of your text.

2.1.6 Readings of text in Language

Listen to this extract from Shakespeare's play As You Like It. As you listen, read the poem aloud; you can do this more than once.

All the world's a stage
And all the men and women merely players:
They have their exits and their entrances;
And one man in his time plays many parts,
His acts being seven ages.
At first the infant, Mewling and puking in the nurse's arms.
Then the whining schoolboy,
with his satchel And shining morning face,
creeping like snail Unwillingly to school.
And then the lover,
Sighing like furnace,
with a woeful ballad Made to his mistress' eyebrow.
Then a soldier. Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel, Seeking the bubble reputation.
Even in the cannon's mouth.
And then the justice, In fair round belly with good capon lined,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances;

2.1.7 Reading of text in Science

Students in science classrooms are given numerous opportunities to read expository text in a variety of formats and for a variety of purposes. They read to solve a problem, understand the steps in an experiment, gain base knowledge about a concept, answer their

own questions, compare their inquiry results with what others have found, expand their basic understanding of a concept, and for enjoyment. Students in science classrooms also read a variety of text formats. They read books, directions for experiments, newspaper articles, websites, and peer work. The reading tasks going on in science classrooms today are quite extensive and do complement efforts being made in schools to improve reading achievement.

However, science teachers need to support struggling readers with strategies that will enhance their comprehension of science reading materials. This article offers a few easy-to-implement strategies that science teachers can use before, during, and after reading.

Before-reading

Front-load meaning when reading expository materials. This prepares students for reading and helps comprehension, as they have some prior knowledge of the subject matter. Specifically, prediction and vocabulary work are important for students to do before they begin reading.

During reading

Helping students process what they are reading while they are reading it has been shown to improve comprehension (Pressley 1999). Activities designed to have students reflect during the reading process are effective and easy to implement. Such activities allow the teacher to identify comprehension problems as soon as they occur, instead of backtracking to identify problems once the entire reading has been completed. This meta cognition, realizing that meaning is interrupted, is critical if students are to read proficiently. Having students reflect on reading while reading also sends the essential message that reading is thinking and that a reader is actively thinking throughout the reading.

After-reading

When students are done with a particular reading, their thinking and understanding of a text does not stop. Readers continue to process and make sense of what they read long after the actual reading event. Science teachers can provide students with opportunities to further process their reading, which in turn can deepen student comprehension.

2.1.8 Reading of text in Social Science

Social studies instruction that is solely text-based tends to emphasize learning about history, while rich, inquiry-based instruction emphasizes learning how to think like a historian.

To think like a historian, your students need to be able to evaluate, corroborate, and synthesize multiple, often-conflicting, sources. These sources may include newspaper articles, paintings, political cartoons, songs, diary entries, depositions, and speeches. Each of these sources requires vocabulary and comprehension strategies that may be vastly different from those used in your students' other classes.

Although exposure to multiple media and sources is a critical component of providing your students with rich, inquiry-based history instruction, you can make your lessons even more powerful through the use of digital multimedia.

Research into effective practices for inquiry-based history instruction has supported the use of:

- Engaging questions to facilitate active learning
- Multiple sources to increase learning
- Scaffolding to develop analytical skills

Technology tools and supports can be an excellent way to help students engage with social studies texts in a meaningful way, and build deeper understanding through guided inquiry.

Consider employing rich multimedia resources to help students explore engaging questions about history, rather than simply describing an event. For example, encourages students to analyze primary source documents and images; explore the interpretations of students, teachers, and historians; and, create digital slide shows that present their own historical arguments.

Learning from multiple sources facilitates a deeper historical understanding. Students should explore historical topics through paintings, diary entries, newspaper articles, and period music. Many of these primary sources are available online in digital format. Consider using digital materials wherever possible so that struggling readers have access to text-to-speech, online references, and dictionaries and glossaries.

A key component of thinking like a historian involves the ability to evaluate and analyze multiple, sometimes contradictory, sources. This is a challenging skill for many students and one that requires significant scaffolding and explicit instruction. Cooperative learning activities can be a great way to help students understand how historians construct narratives about the past. Consider having students work together to analyze historical documents and create a classroom wiki page, giving students the opportunity to discuss different perspectives and construct meaning.

Many websites and software programs are available that can help your students explore the past in an exciting and engaging way. Look for programs that embed tools to facilitate students' comprehension, evaluation, and corroboration of sources, such as questioning strategies, models of think-aloud, and tools that allow students to record and organize their responses. For example, the website Investigating the First Thanksgiving includes a glossary, audio interviews with experts, guidance for analyzing historical evidence, prompting questions, and an opportunity for students to create their own museum exhibits.

2.1.9 Reading of text in Mathematics

Mathematics teachers are generalists and have been trained in reading instruction, they don't see literacy as part of their skill set. More important, they don't appreciate that reading a mathematics text or problem is really very different from other types of reading, requiring specific strategies unique to mathematics. In addition, most reading teachers do not teach the skills necessary to successfully read in mathematics class.

Listening to teachers reword or interpret mathematics problems for their students has led me to start conversations with teachers about taking time to work specifically on reading and interpretation. One strategy we arrived at is for teachers to model their thinking out loud as they read and figure out what a problem is asking them to do. Other strategies include dialoguing with students about any difficulties they may have in understanding a problem and asking different students to share their understanding.

All mathematics teachers should recognize the need to teach their students to read and interpret what they'll call mathematical sentences: equations and inequalities. The National Council of Teachers of Mathematics (1996) states that, "because mathematics is so often conveyed in symbols, oral and written communication about mathematical ideas is not always recognized as an important part of mathematics education. Students do not necessarily talk about mathematics naturally; teachers need to help them to do so". Knowing how to use the unique symbols that make up the shorthand of mathematical statements—such as numerals, operation signs, and variables that stand in for numbers—

has always been part of what mathematics teachers are expected to teach. So in a limited way, we have always been reading teachers without realizing it.

James Bullock (1994) defines mathematics as a form of language invented by humans to discuss abstract concepts of numbers and space. He states that the power of the language is that it enables scientists to construct metaphors, which scientists call “models.” Mathematical models enable us to think critically about physical phenomena and explore in depth their underlying ideas. Our traditional form of mathematics education is really training, not education, and has deprived our students of becoming truly literate. Knowing what procedures to perform on cue, as a trained animal performs tricks, is not the basic purpose of learning mathematics. Unless we can apply mathematics to real life, we have not learned the discipline.

2.1.9.1 Reading requirements for Mathematics Text

Research has shown that mathematics texts contain more concepts per sentence and paragraph than any other type of text. They are written in a very compact style; each sentence contains a lot of information, with little redundancy. The text can contain words as well as numeric and non-numeric symbols to decode. In addition, a page may be laid out in such a way that the eye must travel in a different pattern than the traditional left-to-right one of most reading. There may also be graphics that must be understood for the text to make sense; these may sometimes include information that is intended to add to the comprehension of a problem but instead may be distracting.

Most mathematics textbooks include a variety of sidebars containing prose and pictures both related and unrelated to the main topic being covered. Unique page formatting and structure of most mathematics texts, the basic structure of mathematics problems differs from that of most informational writing. In a traditional reading paragraph, there is a topic sentence at the beginning and the remaining sentences fill in details that expand on and support this main idea; in a mathematics problem, the key idea often comes at the end of the paragraph, in the form of a question or statement to find something (e.g., “How many apples are left?” “Find the area and perimeter of the figure above.”). Students must learn to read through the problem to ascertain the main idea and then read it again to figure out which details and numbers relate to the question being posed and which are redundant. Students have to visualize the problem's context and then apply strategies that they think will lead to a solution, using the appropriate data from the problem statement. Some basic strategies for reading to learn Mathematics are:

Before reading

- ✓ Previews the text by looking at the title, the pictures, and the print in order to evoke relevant thoughts and memories
- ✓ Builds background by activating appropriate prior knowledge about what he or she already knows about the topic (or story), the vocabulary, and the form in which the topic (or story) is presented
- ✓ Sets purposes for reading by asking questions about what he or she wants to learn (know) during the reading episode

While reading

- ✓ Checks understanding of the text by paraphrasing the author's words
- ✓ Monitors comprehension by using context clues to figure out unknown words and by imagining, inferencing, and predicting
- ✓ Integrates new concepts with existing knowledge, continually revising purposes for reading

After reading

- ✓ Summarizes what has been read by retelling the plot of the story or the main idea of the text
- ✓ Evaluates the ideas contained in the text
- ✓ Makes applications of the ideas in the text to unique situations, extending the ideas to broader perspectives.

2.1.10 Summary

In this unit we discuss the reading. Reading is a complex "cognitive process" of decoding symbols in order to construct or derive meaning (reading comprehension). Reading is a means of language acquisition, communication, and of sharing information and ideas. Like all languages, it is a complex interaction between the text and the reader which is shaped by the reader's prior knowledge, experiences, attitude, and language community which is culturally and socially situated. The reading process requires continuous practice, development, and refinement. In addition, reading requires creativity and critical analysis.

2.1.11 Suggested Questions

1. Explain the concept of readings. List the importance of readings of text book.

2. What are the different strategies of readings of text.
3. How reading of text in science is different from reading of mathematics.
4. How reading of text in Language is different from reading of Social Science.

2.1.12 Suggested Readings

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Reflection on text books with respect to gender, environment and health

Structure of the Lesson

2.2.1 Objectives

2.2.2 Introduction

2.2.3 Textbooks as tools for education

2.2.4 Textbooks as tools for social change

2.2.5 Education and gender equality

2.2.5.1. Gendered representations in textbooks

2.2.5.2. Gendered representations in mathematics textbooks

2.2.6 Environment representations in textbooks

2.2.7 Health representations in textbooks

2.2.8 Summary

2.2.9 Suggested Question

2.2.10 Suggested Readings

2.2.1 OBJECTIVES

After going through this lesson learners will be able to:

- ix. Know the concept of text books.
- x. Reflect upon different elements presented in textbooks i.e gender, health and environment.
- xi. Build their capacities as readers and writers by becoming participants in the process of reading.
- xii. Plan the readings interactively – individually and in small groups.
- xiii. Appraise the writings with a sense of purpose and audience, through tasks such as, responding to a text with one's.

2.2.2 INTRODUCTION

A textbook – usually consisting of text and/or illustrations – reviews, structures and renders accessible the state of knowledge in a given subject for a given age group in order

to lay the foundations for standard learning and a shared culture. It thus transmits a society's cultural capital to its youngest citizens at a particular moment. A number of studies in the last 30 years or so have shown that a greater supply of educational materials, especially textbooks, is the most cost-effective way of improving the quality of education. It is one of the most efficient variables, in terms of education, among the so-called policy variables, i.e. those which can be influenced.

2.2.3 TEXTBOOKS AS TOOLS FOR EDUCATION

Textbooks allow access to all sorts of information. Not only do they develop the ability to read and write but they also encourage critical thinking, independence and creativity. For many pupils and their families, textbooks are the only introduction to the written word in homes where there are no books, whatever the reason: the culture, distribution or supply problems, cost, etc. Because the poorest children do not have access to teaching aids, they often face the greatest difficulties in learning. Thus access to textbooks is usually one of the first recommendations made by policy-makers.

For teachers, textbooks have been the basic – and sometimes only – teaching resource, extending their means of instruction, since textbooks contain the general components of the curriculum, structure the teaching sequence and form the basis of assessment. In fact, they may play a part in self-education and compensate for lack of teacher qualifications. In this respect, the teacher's handbook is a valuable contribution which strengthens the textbook's impact on pupils.

Textbooks are still the cheapest of available media, and they are easy to carry and use. Nevertheless, a number of problems have yet to be solved. Producing a good textbook is a long and difficult task; it involves a set of substantial costs, from manufacturing to transporting to the monitoring of its technical and educational qualities. Textbook accessibility and its availability throughout an area may also pose a problem.

2.2.4 TEXTBOOKS AS TOOLS FOR SOCIAL CHANGE

- **Socialization:** In the interpretation and presentation of knowledge, textbooks are a vehicle for norms, values and models of social behaviour through the representations that they contain. Thus textbooks play a key role in all societies.
- **Human right:** The concept of universal values, as reflected in the books of "human rights", is promoted by international bodies by means of instruments ratified by numerous countries. In practical terms, guaranteeing human rights means not only

monitoring bias and discrimination, which are human rights violations, but also expressly promoting human rights and ensuring that all representations further equality.

2.2.5 EDUCATION AND GENDER EQUALITY

It is therefore essential to know and use the international instruments adopted since the 1948 Universal Declaration of Human Rights which underpin and explain these rights.

Two years later, the Beijing Declaration, adopted at the Fourth World Conference on Women, re affirmed the commitment to ensure “the full implementation of the human rights of women and of the girl child as an inalienable, integral and indivisible part of all human rights and fundamental freedoms.” Inherent in all these texts is the right to education as access to education is a prerequisite for achieving equality and other basic human rights.

- **The right to Education for All: a priority for girls and women**

Equality of rights between men and women, especially as it applies to access to education, has contributed to the development of the concept of the right to Education for All. As a result, the education sector’s greater openness to girls has made it possible to re-examine the issue of social justice and promote egalitarian gender relations.

Viewed under a wider lens, gender equality is a means to combat underdevelopment and ensure sustainable development, as girls’ and women’s education has a positive influence in all areas of social activity, health, demography, the economy, children’s education and community welfare. Education therefore plays an important role in transforming social relations and supporting economic, social and political development.

Thus girls and women must be given priority in the field of education, as analyses and reports reveal persistent gender inequality in this sphere.

- **Textbooks: an important variable in girls’ education and gender equality**

Despite progress in the last decade, there is still much to be done to “eliminate gender disparities” and, even more, to achieve equality, especially in education.

The crucial problem is girls’ underachievement, measured by access to schools, academic performance and “survival” within the education system. Many factors hold back girls’ education: the economic situation and low income, a family and social environment with traditional patriarchal structures, and operational failures in the education system (shortages of schools, teaching materials and teachers, sexual abuse of girls, and so on).

There is also a link between girls' underachievement and textbooks, to the degree that gender inequality and discrimination are reinforced by textbooks, whose power of legitimating is all the greater because they are a rare commodity:

- girls have fewer books than boys, since textbooks are expensive and in short supply;
- the representations of both genders in textbooks, reinforced through teacher/pupil interaction with the teacher, continue to put girls at a disadvantage

For these reasons, girls must have equal access to textbooks and gender representations must be changed. Teachers must also be trained to avoid contributing to the transmission of representations that convey inequality, whatever textbook is used.

Under a quality education policy the textbook is understood as an educational tool of prime importance, being instrumental to culture, to educational attainment and to in-service teacher training. It is also a tool for social change because it disseminates universal values. In terms of social change, international instruments give priority to combating gender inequality, which contradicts the ideal of justice and impedes development. Thus it is essential for textbooks to be covered by policies which respect and include the rights of girls and women for their full enjoyment of a good-quality education.

2.2.5.1. GENDERED REPRESENTATIONS IN TEXTBOOKS

- **Understanding the difference between Sex and Gender**

In many cultural contexts, the differences between girls and boys, and between men and women, are regarded as natural. Children are classified at birth – usually by observing their genitals – into two categories: male and female. On the basis of the category to which they belong, society will consider them qualified to do certain things and expect certain attitudes and behaviour of them. Their rights and duties and their social, economic and political roles will be different during their childhood and throughout their adult lives. All societies are organized around this basic social differentiation, which dominates the life of individuals to a considerable extent.

Sex refers to the biological differences between males and females. It relates to the observable difference between their genitals and to their physiological functions in procreation.

Gender is related to culture and the social division into “masculine” and “feminine”. Gender therefore pertains to the qualities, tastes, aptitudes, roles and responsibilities associated with men and women in a society. Definitions of masculine and feminine vary enormously– demonstrating their social origin – since every society develops its classification on the basis of its own criteria and principles. The concepts of masculinity and femininity are not developed independently of each other but are mutually dependent.

Gendered representations are embodied in characters, and it is therefore through these that gender equality must be promoted.

Inclusion of a character in a teaching aid – in this case a textbook – contributes to the development of gendered representations. The internal structure and purpose of the aid should therefore be considered.

2.2.5.2. GENDERED REPRESENTATIONS IN MATHEMATICS TEXTBOOKS

- **To prove that it is important to cover all subjects.**

Reading, History, Geography and Civics textbooks are held to be full of social representations. However, although mathematics lessons may seem to be neutral and lacking in representations, abstract ideas are translated into examples drawn from the children’s everyday life in order to make learning easier. These lessons thus present characters with gendered identities. Mathematics textbooks convey many representations of society, which are all the more pernicious for not being consciously registered.

- **To help deconstruct the naturalization of skills in scientific subjects.**

The ability to understand mathematics is a good example of the naturalization (or gender-base attribution) of intellectual skills. In many cultures, it is commonly thought that boys and men are “naturally” good at technical and scientific subjects, while girls and women are good at literature and social sciences.

- **To study a subject that is particularly discriminatory against women.**

Naturalization of mathematics skills has significant consequences, which are particularly disadvantageous to women. This partly explains the failure to direct girls towards scientific subjects and the problems that they may encounter when entering occupations which are

valued economically, socially and symbolically and for which selection is based on mathematical ability.

Female role models are rare. Girl pupils have little foundation for identification and projection, and boys have no role models from the opposite sex, which is barely visible. The subject – mathematics in this case – is taught by men rather than women. Mathematical knowledge is used mainly by men and boys. Consequently, pupils of both sexes, together with their parents and teachers, perceive that knowledge is legitimate for the male sex rather than the female sex. The textbooks are thus unlikely to make girls interested in learning mathematics.

2.2.6 ENVIRONMENT REPRESENTATIONS IN TEXTBOOKS

Environmental education topics integrated into the school subjects. In **Social studies** the family, citizenship, cleanliness at home, school and the neighbourhood, conservation of the environment, economic activities and the environment, natural resources, the interdependence of things in the environment, ecosystem and ecology, environmental degradation, development issues, overpopulation, weather, water and waste disposal. Science Health issues, food and hygiene, health and sanitation, first aid, living things, energy, diseases, water, air, matter.

Mathematics Using the environment to get teaching materials like counting. Using the environment as a teaching context like identifying different shapes, measurement, drawing. Setting mathematic problems related to the environment.

Vocational skills Handcrafts like making baskets, pottery, laundry, cookery, agriculture. Personality and sports Health issues, personal hygiene, care of resources and life skills. Information communication and technology Using Information technology to access environmental knowledge in different disciplines.

Language Structure, reading for comprehension, vocabulary and composition writing. It can be seen that the mode and extent to which environmental education has been integrated into the subject differs from one subject to another. In some subjects environmental content has been included as content to be learnt, while in others it has been included as a teaching and learning resource and learning tasks. For example in the languages, environmental education appears as reading passages, vocabulary and structure exercises enriched by environmental notions.

In mathematics, environmental education is found in the form of mathematical problems and teaching and learning resources. However, the intensity of environmental education content varies from one subject to another.

Analysis of the environmental education content included in these subjects show that emphasis is on teaching about the environment and to a lesser extent environmental education as education in the environment. Focus on the third dimension of education for the environment is minimal. It is anticipated that when learners learn about the environment, it is also education for the environment.

2.2.7 HEALTH REPRESENTATIONS IN TEXTBOOKS

Health promotion is the process of empowering people to have control over their health and improve it. It is more than paying attention to individual behaviors, and includes a wide range of social and environmental interventions. One of the most important fields in health promotion is health education, and schools are the biggest ground for providing education. The importance of schools is well reflected in the statement by the United Nations Children's Fund (UNICEF) that calls schools "the widest world channel for broadcasting information to the families, school staff, community members and students themselves".

Therefore, schools are an imperative part of health promotion. Schools provide access to about one billion students and their families worldwide. Furthermore, schools provide necessary education to students at the most effective time of their lives.

Health education in schools is effective in promoting knowledge, reforming, and improving health related beliefs and behaviors. It seems, however, that children's health knowledge and health related behaviors are inadequate and poor in underdeveloped and developing countries. For example, a study in India observed malnutrition in primary school children, as well as limited knowledge about nutrition among them. Deficient health knowledge and poor health related behaviors have been reported in studies on school children in different state of India.

School textbooks are an essential part of health education. They are the primary tools for transmitting educational content and guiding the classroom activities. School textbooks have been considered as important as teachers, students, and the classroom itself in achieving educational goals. The role of school textbooks as a reliable source of information becomes even more important when access to other sources of information is limited.

School health is an important aspect of children's health and an integral part of school education. *School Health Services in India: The Social and Economic Contexts*, looks at school health in a holistic manner by locating the context of children's socio-economic circumstances and the health needs that arise from it. It uses empirical work to look at the context and programmes that address these needs and then examines the engagement of health related issues in the school curriculum. It brings together original research that addresses the socio-economic context of school-going children and programmes such as Midday Meal programme and the school health services that are designed to address the nutritional needs and health concerns of children. Health education is now part of school curriculum.

2.2.8 Summary

In this unit we discussed about the text books and reflection on core elements in textbooks with respect to gender, environment and health. Printed textbooks – which are still of paramount importance today as the education system's basic framework of learning and as symbolic reflections of their societies – tend unwittingly and unintentionally to embody a substratum of patriarchal cultures that are discriminatory against girls and women despite all the efforts made in the last few decades. This is because gender equality – like human rights – is a recent value for humanity as a whole and upsets cultures based on dominance. However, no one disputes the need to ensure that socialization aids are consistent with universal human rights principles in order to meet a collective ideal of sustainable development for health and environment.

2.2.9 Suggested Questions

1. What is a textbook? Why it is important for social change?
2. How textbooks put reflection on gender, health and environment?

2.2.10 Suggested Readings

UNESCO: www.unesco.org

International Institute for Educational Planning (IIEP): www.unesco.org/iiep

International Bureau of Education (IBE): www.ibe.unesco.org

Association for the Development of Education in Africa (ADEA): www.adeanet.org

Georg Eckert Institute – Institute for International Textbook Research (GEI): www.gei.de

International Association for Research on Textbooks and Educational Media (IARTEM): www.iartem.no/index.htm

International Centre for Girls' and Women's Education in Africa (CIEFFA): www.cieffa.org

Forum for African Women Educationalists (FAWE): www.fawe.org

Gender and education for all: the leap to equality; EFA global monitoring report, UNESCO, 2003/4: www.efareport.unesco.org

Plan of Action for the first phase of the World Programme for Human Rights Education, NCERT books of class ninth and tenth.