
UNIT 9 INTEGRATED LEARNING AND TEACHING PROCESSES



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9.0 INTRODUCTION

We all are familiar with the time table of classroom teaching activities. The total school working hours on a working day are divided into 6 or 7 periods of nearly equal duration, about 40 or 50 minutes each. In each period topic from a subject is taught or discussed. For example, Language is taught in the first period, Mathematics in the second period followed by Science, Social Studies in the subsequent periods. The allotment of subject for each period of a day is decided by the teachers while framing the routine of activities. Once the time table is decided for a class it remains unchanged for quite a long period, at least for six months and the classroom transactions of subjects are strictly as per the time table except on very special occasions.

Normally, each subject in a particular class is allotted to a particular teacher to teach. That means in each period the students of a class would be taught by a different teacher teaching different subject/topic. Exceptions are also there. When



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there are less than the required numbers of teachers, a teacher has to take more than one period in a class on any given day. As you know, in many primary schools in our country only one teacher is assigned to one class for one academic year. He/she has to take care of the students in that class throughout the day teaching all the subjects of the curriculum meant for the class without disturbing the time table. Here is a situation to visualize.

Situation 1: *Ms. Sarah teaches children in class IV of a rural school. She was taking a class on 'Drinking Water'. Instead of teaching them directly, she took the students to the place in the school where drinking water system was placed. She had the following conversations with the students.*

Ms.Sarah: "Well students, observe carefully and describe the materials used for getting drinking water."

Students: "A big pot with cover on a wooden stand, a bucket, a ladle with a long handle, four stainless steel glasses, a soap and a brush for cleaning the pot and the glasses."

Ms.Sarah: "We are going to fill the pot with safe drinking water for today's use in the school. Tell me what shall we be doing?"

Students: "Clean the pot and the bucket, bring water from the nearby tube well or the well, fill up the pot by filtering it with a clean piece of cloth and then cover the pot."

The children were very enthusiastic with the answer, as they knew what was involved in using the system every day in the school. Sarah continued.

Ms.Sarah: "Why do you clean the pot and the bucket?"

Students: "Water in clean pots is free of germs which cause disease."

Ms.Sarah: "What else should you do to keep the drinking water germ free in the pot?"

Students: "Filter the water from the well and keep it covered."

Sarah went on discussing with the students how to keep the surrounding of the drinking water site clean. Then she shifted her discussion to carrying water from the tube well and filling the water pot. Since, buckets were of large size which were difficult for the students to carry when filled with water, Ms.Sarah brought four cans of equal size which would be easier for students to carry. She wanted the students to make some simple estimate. She told them that the pot can be completely filled with full five buckets of water and the students should tell her how many cans of water would fill the pot. The students were hence challenged with a thought provoking question.



Mr. Kahnu suggested filling the pot with the cans and counting the number of cans full with water required to fill the pot. Ms. Uma told that at a time four students with one can each could fill the pot and if it would be possible to count the number of times it took the four students to fill the pot completely, then the result could be arrived at by multiplying the number of times with four. Mr. Kartar thought for a while and told that if it could be known as to the number of cans required to fill a bucket, then multiplying this number by five would give the required result.

While the children were busy in cleaning and filling the pot, Ms. Meena and Ms. Shahana began singing “Pani re pani....” and others joined the chorus. At the end of the class, Sarah could give the following three tasks:

- *What are the ways of collecting clean water for drinking?*
- *If it takes 20 minutes for four students to fill the water pot, how many minutes would five students take to fill up the same pot, filling at the same rate?*
- *Describe within 25 sentences, the efforts made by the class to collect and store drinking water.*

You will agree that unlike the subject based classroom activities, Ms. Sarah was relying more on the real life experiences for learning and teaching. She took the drinking water as the basic theme which is quite meaningful and familiar in the real life for all children in the class. Based on this concrete real life experience, she introduced the concepts from different subject areas which were more contextual to the main theme and hence meaningful for the learners. This is a simple example of a situation where integrated learning is taking place. Such integrated approach of learning and teaching is considered more contextual and meaningful for learners especially for young children in the primary schools than the subject based approaches that are usually followed.

In this unit, let us know the basic characteristics and different types of integrated learning which will enable you to adopt appropriate approach of integrated learning in your classes.

To complete and comprehend different concepts in this unit, you will need 07 hours of study.

9.1 LEARNING OBJECTIVES

After completing this unit you will be able to:

- explain the concept of integrated learning, its needs and relevance.
- describe different types of integration and their use in meaningful learning.



- use the techniques to integrate learning experiences within one subject and integrating different subjects.
- identify the characteristics of integrated text books and learning materials

9.2 CONCEPT OF INTEGRATED LEARNING

Let us consider a situation given below.

Situation 2: Ms. Sushma teaches Science while Sophia teaches Language in the same class VI. While Ms. Sushma was teaching the characteristics of different parts of a plant, Sophia was trying to develop appreciation of beauty in nature through a poem in the text. One day both of them decided to take the class together combining Science and Poetry. The topic they chose was 'Flowers'. They planned the lesson in detail where in Ms. Sushma was to deal with different types of flowers and the parts of a hermaphrodite flower (a complete flower) and Ms. Sophia was to recite and develop appreciation for beauty of different types of flowers. But due to some accident Ms. Sophia had to remain absent in that class. Ms. Sushma carried on teaching with the plan both of them prepared together.

This may sound absurd but what Ms. Sushma was using is integrated teaching-learning process.

There are several related terms used in the context of integrated learning and teaching like 'integrated curriculum', 'interdisciplinary teaching', 'multi-disciplinary teaching', 'thematic teaching', and 'synergistic teaching'. Let us examine some of the definitions offered by researchers working on integrated learning and integrated curriculum:

- *“An integrated study is one in which children broadly explore knowledge in various subjects related to certain aspects of their environment” (Humphreys, Post, and Ellis, 1981 p.11).*
- *Integrated learning refers to “education that is organized in such a way that it cuts across subject-matter lines, bringing together various aspects of the curriculum into meaningful association to focus upon broad areas of study. It views learning and teaching in a holistic way and reflects the real world, which is interactive.” (Shoemaker, 1989, p. 5)*
- *Jacobs defines integrated or interdisciplinary as “a knowledge view and curricular approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience” (1989, p. 8).*
- *“Integrated curriculum is a way to teach students that attempts to break*



down barriers between subjects and make learning more meaningful to students. The idea is to teach around themes or 'organizing centers' that students can identify with, such as 'The Environment,' 'Life in School,' or more traditional areas like 'Myths and Legends.; (Beane, 1977, pp. 13 - 14).

In general, all the definitions of integrated curriculum or integrated teaching include the following:

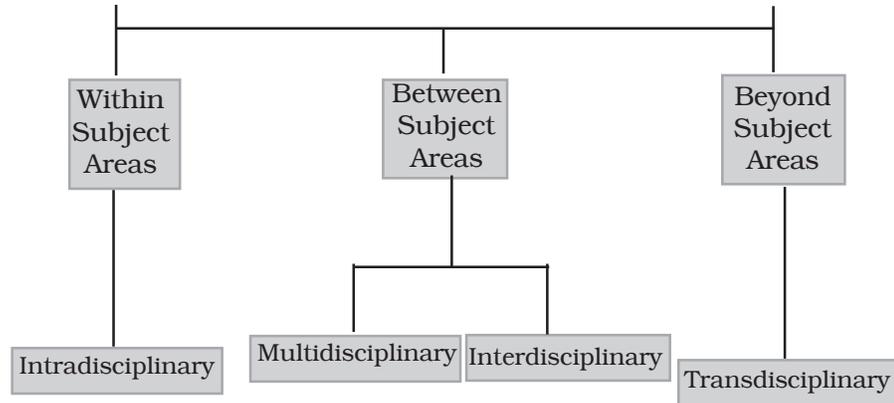
- *A combination of subjects:* More than one curricular subject area are combined together to evolve a natural continuum of contents and activities which is related to the earlier experiences and relates to the real life issues of the learners.
- *Sources that go beyond textbooks:* Since the integrated materials relate to the direct and real world experiences of the learners, the transaction goes beyond the contrived, abstract and unfamiliar textbook materials.
- *Relationships among concepts:* The concepts selected from different subject for preparing an integrated lesson are interrelated with each other so as constitute a meaningful whole for the learner. Holistic meaning is more important than fragmented unrelated concepts which carry very little learning for the learners.
- *Thematic units as organizing principles:* The integration of the related concepts is invariably around a theme familiar to the learners like 'Water', 'Fire', 'Environment', 'Election'
- *An emphasis on projects:* A project relates to a social issue concerning the learner which is carried to completion in its natural setting. In order to complete a project, the learners, preferably work in groups, are required to combine all their knowledge and experience relating to different disciplines in order to solve a real life problem.
- *Flexible schedules:* The integrated teaching- learning cannot be confined to any fixed period within the classroom time table. Enough of freedom has to be given both in terms of time and space for effective transaction of integration of concepts.
- *Flexible student groupings:* In order that the integrated learning to be meaningful and effective for the learners, flexibility in grouping, preferably heterogeneous grouping with students' interest and choice, need to be adopted. Heterogeneous grouping helps in building a natural setting and peer learning.

E1. State at least three differences of an integrated teaching from the traditional subject-based teaching.



9.3 PROCESS AND TYPES OF INTEGRATION

Integration may be classified in four different ways as shown in Fig. 1.



9.3.1 INTEGRATION WITHIN SUBJECT AREA

Integration within one subject area or Intra-disciplinary Integration is a process of integration where the knowledge and skills of same subject are connected together during the teaching learning process. In other words, it is a process of combining different concepts of several topics within the same subject during the process of classroom transaction.

For example:

- In language teaching, we can combine reading, writing and oral communication skills through story telling.
- In environmental studies in class II, different topics like 'Family', 'Neighbourhood', 'Festival', 'Occupation' etc. can be linked together in the context of personal and social relevance of discussing 'Life in Our Village'
- In Mathematics the concepts of percentage, decimal fractions, calculation of interests can be combined to learn profit and loss.

9.3.2. INTEGRATION BETWEEN SUBJECT AREAS

The process of integrating the knowledge and skills of two or more different subjects during the teaching- learning process may be of two types: Multidisciplinary and Interdisciplinary.

Multidisciplinary Integration: In multidisciplinary integration the subject area outcomes remain distinct, but due to some meaningful linkages they are connected together during the process of transaction. Fig 9.2 given bellow shows the relationship of different subjects to each other and a common theme i.e. WATER.

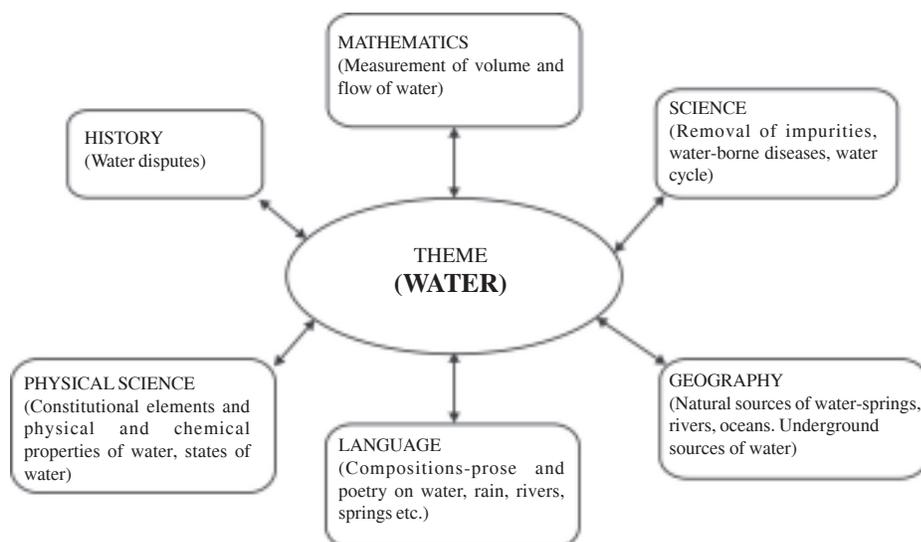


Fig. 2: Example of Multidisciplinary Integration

Interdisciplinary Integration: Interdisciplinary integration is a process of integrating the interdependent or common knowledge and skills from more than one subject areas during transaction process. For example, concepts of mathematics and science are acquired by integrating to singing, sculpting, and painting and dancing.

9.3.3 INTEGRATION BEYOND SUBJECT AREAS

Integration beyond Subject Areas or Trans-disciplinary integration is a process where the students’ day to day experiences are connected to the different subject areas to acquire knowledge and skills. In other words interdisciplinary and disciplinary skills in a real life context are focused in Trans-disciplinary integration. For example, Project based learning and teaching. In a project based learning students tackle a local problem and learn the concepts and skills through the process of exploring and solving projects.

9.3.4 COMPARING AND CONTRASTING THE THREE APPROACHES TO INTEGRATION

Given below in Table 1 the comparison and contrast are some aspects of comparison between the three approaches of integration.

Table 1- Comparison of Three Types of Integration

	Multidisciplinary	Interdisciplinary	Trans-disciplinary
Organizing Center	<ul style="list-style-type: none"> Standards of the disciplines organized around a theme 	<ul style="list-style-type: none"> Interdisciplinary skills and concepts embedded in disciplinary standards 	<ul style="list-style-type: none"> Real-life context Student questions
Conception of Knowledge	<ul style="list-style-type: none"> Knowledge best learned through the structure of the disciplines A right answer One truth 	<ul style="list-style-type: none"> Disciplines connected by common concepts and skills Knowledge considered to be socially constructed Many right answers 	<ul style="list-style-type: none"> All knowledge interconnected and interdependent Many right answers Knowledge considered to be indeterminate and ambiguous
Role of Disciplines	<ul style="list-style-type: none"> Procedures of discipline considered most important Distinct skills and concepts of discipline taught 	<ul style="list-style-type: none"> Interdisciplinary skills and concepts stressed 	<ul style="list-style-type: none"> Disciplines identified if desired, but real-life context emphasized
Role of Teacher	<ul style="list-style-type: none"> Facilitator Specialist 	<ul style="list-style-type: none"> Facilitator Specialist/generalist 	<ul style="list-style-type: none"> Co-planner Co-learner
Starting Place	<ul style="list-style-type: none"> Disciplinary standards and- procedures 	<ul style="list-style-type: none"> Interdisciplinary bridge KNOW/DO/BE 	<ul style="list-style-type: none"> Student questions and concerns Real-world context
Degree of Integration	<ul style="list-style-type: none"> Moderate 	<ul style="list-style-type: none"> Medium/intense 	<ul style="list-style-type: none"> Paradigm shift
Assessment	<ul style="list-style-type: none"> Discipline-based 	<ul style="list-style-type: none"> Interdisciplinary skills/ concepts stressed 	<ul style="list-style-type: none"> Interdisciplinary skills/ concepts stressed

(Source: Drake & Burns (2004))

E2. Write down at least two differences between multidisciplinary integration and trans-disciplinary integration

9.4 PLANNING FOR INTEGRATED LEARNING

The ideas of lesson plan and unit plan has been discussed in Unit -8 of Block –II to a great extent. In this section let us understand the ideas of integrated planning in the subject, among the subjects and beyond the subjects.



9.4.1 INTEGRATION WITHIN SUBJECT AREAS

Have you ever thought of combining or integrating different concepts related to a topic while teaching a particular subject in a class?

Normally, we do not think of the possibility of integration within a subject area and we strictly go by the order of presentation of the concepts in the textbooks. Suppose you are teaching 'Living and Non-living beings' in Science to class VI students. There are so many concepts which are related to the topic like differences between living and non-living on the basis of reproduction, movement, food and metabolism, etc. and other concepts such as ecological balance among different types of living beings, depletion and conservation of natural resources related to the growth in population of living beings etc. You can observe that the learning objectives of one topic may have some sort of relation with those of another topic of the same subject. If such related concepts could be regrouped, the learners can have more holistic and meaningful learning of the issue or topic that is being discussed in the class. To avoid repetition in learning and to make learning meaningful, it is better to link different competencies even in the same subject.

While preparing the integrated plan within a subject, following steps may be considered:

- Determine the distinctive nature of learning in each subject area.
- Determine the competencies/ outcomes of learning in each topic under the specific subject area.
- Identify knowledge and skills (competencies/outcomes of learning) connected to the topic that you are planning to teach.
- Plan learning experiences for the teaching of the topic which need to be connected closely to the real life experience of the student as far as possible.

For example, in the subject i.e. EVS of class-II the following steps and process have been illustrated in **Table 2** to indicate integration of concepts. The plan is a sample of integrated approach of planning process. Keeping intact the purpose of integration as a result of which the desired competencies can be attained, you plan the steps of integration as per your suitability.



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Table 2- Integration in Class-II EVS

Topic	Competencies	Process of integrating the competencies
“Village Festival” (Integration of my family with my neighbourhood)	<ul style="list-style-type: none"> Identifying the work of different family members. Activities of the students to help the family. Identifying the importance of neighbourhood. Recognizing the different social institutions. 	<ul style="list-style-type: none"> What do you see in the village festival? Who organizes the work? Do all the members of village do same thing in the festival? State the name of family members and what they do in day time. Do they all do same or different work? If different, who does what? What do you do at home? Who helps you in doing your work? How do you help others at home? Describe the help you receive from outside your family. Name the persons, places or the organizations from which you get support. Discuss in group to name the places he/she has seen: market, hospital, post office etc. Discuss group wise about the functions of different places and institutions.


ACTIVITY-1

Develop a plan of integrating different competencies to teach ‘Profit and Loss’ in Mathematics to class V students.

9.4.2. INTEGRATING DIFFERENT SUBJECT AREAS (MULTIDISCIPLINARY INTEGRATION)

You will agree that in each class each subject is taught following separate and specific methods supposed to be appropriate to the nature of the subject. For example, induction is typically used only in Mathematics, storytelling in History,



and nature observation in Science and EVS. However, do you think that storytelling can also be used to make Mathematics teaching more interesting for students in early grades?

Using different methods with flexibility would help you not only in making the lesson more interesting for students, but also in integrating different subjects meaningfully. There are linkages among the different subjects regarding their competencies or learning outcomes. You need to link the topics of different subjects in a particular class for effective learning and to avoid repetition. Let us discuss some strategies of preparing integrated plan in which the following may be considered:

- Bring together topics, themes, issues or big ideas and learning outcomes from more than one subject area keeping the subject specific outcomes distinct;
- Knowledge and skills are learned through individual subject areas but at times connect to cross-curricular topics, themes, issues or big ideas;
- Determine the distinctive nature of learning and effective methods of learning in each subject area;
- Examine the possibilities of combining concepts from different subject areas through an integrating method of learning and/or teaching.
- The students are guided to see linkages between subject areas.

As an illustration, observe the outlines of an integrated plan for the subjects like language, environmental studies and mathematics of class-II given in Table 3.

Table 3- Integration of Concepts in Language, EVS and Mathematics (Class II)

Topic	Competencies	Process of integrating different subjects
The Story of Aaruni	<p><i>Language:</i></p> <ul style="list-style-type: none"> - Reading the story with correct pronunciation, - Make question to get the answer, - Read the picture and describe the story. <p><i>EVS:</i></p> <ul style="list-style-type: none"> - Describe about different season and specially rainy season, 	<ul style="list-style-type: none"> - Make students sit in a circle and tell the story following appropriate story telling method. - Make small size groups of students for them to prepare questions, inter group interaction and correction. - Make the students to arrange the pictures sequentially (supplying the situational pictures) to describe the story.



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<ul style="list-style-type: none"> - Name the crops cultivated during rainy season, - Name the instruments used for cultivation, - Differentiate between the ground water and rain water, - Say the causes of water pollution and common diseases during rainy season. <p><i>Mathematics:</i></p> <ul style="list-style-type: none"> - Geometrical shapes of the crop fields - Measures (Non-standard unit) of water i.e. container - Subtraction through objects 	<ul style="list-style-type: none"> - Make the students to describe their feeling in rainy season. <p><i>Ask the students to</i></p> <ul style="list-style-type: none"> - describe the crops cultivated in this season. - list out the use of instruments for cultivation(Traditional and modern technology) - differentiate the quality of ground water and rain water. - discuss rain water pollution and common diseases. <p><i>Further ask the students to:</i></p> <ul style="list-style-type: none"> - discuss on geometrical shapes relating to the crop fields. - discuss about the different measures of water(both standard and non-standard measures). - draw freehand sketch of a map of different sizes of the crop fields. - List different types of non-standard units found to be used in their locality.
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The integrated plan can be more effective if the activity based approach discussed earlier in Unit-4 of Block-1 is used in classroom transaction keeping the desired competencies in view.

9.4.3 INTER-DISCIPLINARY INTEGRATION (BETWEEN /AMONG THE SUBJECT AREAS)

Interdisciplinary integration is somewhat similar to multidisciplinary integration. In multidisciplinary integration some linkages among different subjects are identified and connected for integrated planning but in interdisciplinary integration interdependent or common knowledge and skills from different subjects are identified and integrated for planning and transaction purposes. The following steps may be followed for planning interdisciplinary integration:



- Topics, themes, issues or big ideas and learning outcomes are identified from more than one subject area.
- The common learning outcomes are identified.
- Knowledge and skills are learnt beyond the immediate lessons.
- The students are guided to acquire the curricular knowledge and skills through integrated approach of learning.

In the process of interdisciplinary integration, the concepts and skills from different subject areas/disciplines are combined for strengthening a core skill/competency. The learning outcome/skill/competency forms the core around which the relevant concepts from various subjects are arranged to strengthen it in a most natural way connected to the real life experiences of the student as far as possible.

A diagrammatic representation of the interdisciplinary integration is presented in Fig.9.3:

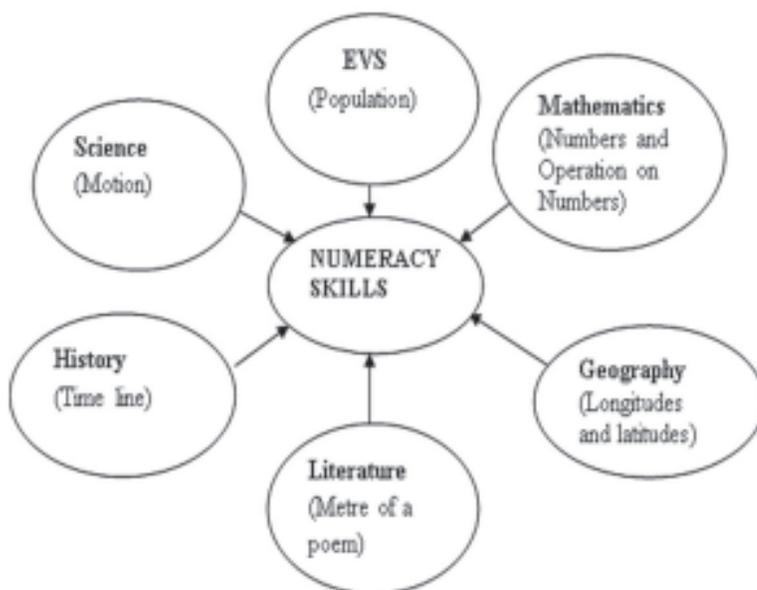


Fig 3: Numeracy Skills in Different Subject Area Competencies

Notice that the planning process of the interdisciplinary integration is similar to that of the multidisciplinary integration.

9.4.4 TRAN DISCIPLINARY INTEGRATION (BEYOND SUBJECT AREA)

Almost all the learning experiences provided in the classroom and school is based on the curricular subjects and textbooks on those subjects. But, as we all know, there is unlimited scope available in and out of the school for learning not



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only the intended curricular outcomes but also much more than those. If we can expose our students to those experiences, their learning can be strengthened and enriched. There are innumerable ways of integrating those experiences in building a holistic plan for learning of children at different levels of schooling. Here are some suggestions as to how you can go about it:

- Have the list of competencies/learning outcomes of each subject of each class, normally available in the school, ready with you.
- Plan the co-scholastic activities with regular intervals. These should include participation in local festivities, observation of important social and cultural functions, visit to market and other important places/institutions in the locality, conducting various cultural activities in the school, witnessing games, sports and other entertaining events.
- Before the students join the events, list the skills/competencies/learning outcomes the students can acquire from the events. This list has to be finalized in consultation with the students and may contain the learning outcomes from more than one subject area. Here the skills and competencies are more important than the subjects.
- After the students come back from the events, have a discussion with the student regarding the new knowledge or experience they have acquired besides the earlier planned outcomes. On most occasions, you will find students have acquired much beyond the planned outcomes.
- After the discussion request the students to prepare a brief report of their experiences gained from the event. This would not only enhance their composition abilities, but would help them to reflect upon their gains and would further help them to sustain the gains.

In brief, trans-disciplinary integration helps in

- (i) making learning more meaningful while reinforcing the curricular learning outcomes,
- (ii) acquiring more skills and competencies than planned,
- (iii) making learning more contextual and real life related
- (iv) realizing that every situation, be in school or outside the school is a source of learning, and
- (v) strengthening the belief that learning is a continuous process not confined only to the confines of the school and curriculum.

Trans-disciplinary integration is one way to actualize the main guiding principle of the NCF 2005 i.e. *'connecting knowledge to life outside the school'*.

E3. State the steps of planning for trans-disciplinary integration.



9.5 INTEGRATED TEXT BOOK AND MATERIALS

We have so far discussed how curriculum and teaching learning processes can be integrated breaking the boundaries of subject specific categorization of concepts and experiences. Can the textbooks be integrated in the same manner?

We are mostly acquainted with textbooks that are subject-based for each class. The concepts in these books are arranged in a sequence as considered convenient for teaching rather than for convenience in learning. Most of the contents in these textbooks are theoretical, abstract and based on contrived experiences rarely relating them to the real experience of the learner. Thus there are advantages and limitations of a textbook which is illustrated in Table 4 below.

Table 4- Advantages and Limitations of Textbooks

Advantages	Limitations
<ul style="list-style-type: none"> • A textbook can be used as a syllabus. • Some learners need a textbook to focus. • A textbook serves as a time regulator. • Patterns (structure) in learning can help knowledge retention. • Textbooks provide ready-made learning materials. • Students can prepare for lessons ahead of time. • A class without a textbook may seem unprofessional to students. • Well-designed textbooks assure quality lesson plans. • A textbook provides support for inexperienced teachers 	<ul style="list-style-type: none"> • Topics in the textbook may not be relevant or interesting. • Textbooks may present idealized worldviews and distort real issues. • Textbooks may not suit students' individual learning styles. • Textbooks may inhibit teacher's creativity. • The teacher may not agree with the content, structure, or methodology of the textbook, but is forced to use it. • The textbook may contain inauthentic language.

Source: www.sendaiedu.com (2011)

When the teaching learning processes are becoming more and more learner-centric, it is becoming difficult to base classroom transaction on the traditional subject specific textbooks, especially in the classes of primary schools.

In Unit 4, while discussing activity based approach, you might have realized that learning activities are related to real life problems and situations. At the beginning stage of schooling, the learning activities replicate those with which the child is



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familiar in his/her locality which makes the transition of the child from his/her home to school easier. Which activities of the child at his/her home is specific to any subject area? Can you recall?

When the child comes to the school for the first time, s/he has acquired a lot of experience like talking freely and expressing his/her thoughts using appropriate language, knows how to respect others, has developed habits of cleanliness, has simple ideas about the market, and several such other things. These knowledge or experiences are not learnt in any compartmentalized manner. If you analyse any activity of the child, you will find each one integrates several units of concepts/ experiences. From such analyses you can realize that integrated learning is very natural with children. Therefore, in the early grades, activity-based approach supported by integrated textbooks and materials provide facilitating conditions for learning.

 **ACTIVITY-2**

List the characteristics of a textbook you consider to be an excellent one.

Source: www.sendaiedu.com (2011)

Things to look for in a good textbook

- The textbook should fit the needs of your class, as well as the national requirements.
- The instructions should be clear and easy to follow.
- The textbook should utilize a variety of learning styles.
- The content should be relevant and useful to the present and future needs of the students.
- The textbook should contain a variety of interesting topics and tasks with appropriate visual aids.
- Objectives in the textbook should be clearly stated and implemented throughout it.
- The textbook should encourage students to form their own opinions and learning strategies.

9.5.1. CHARACTERISTICS OF INTEGRATED TEXTBOOKS

In subject or content- centred textbooks i.e. the textbooks with which we are familiar, the topics are arranged based on content topics and within each topic the concepts are sequentially arranged from simpler to complex concepts. The



arrangement of topics and concepts within the topics follow a definite logical order which is mainly based on convenience for teaching. At the end of each topic, some questions or exercises are usually given as assignments for students which require invariably written responses. The text material is also written in a serious tone. There is hardly any humour, cartoon or activity for students to do in these texts.

ACTIVITY-3

Take one topic each from the textbooks on Language, Mathematics and EVS of class V and analyse the structure of each topic in terms of the title, the length and nature of presentation of the text, the illustrations and pictures used and their relevance, the concepts in the text, the learner friendly elements in the text, the topic-end exercises and determine the differences, if any, in the structures of the three texts

Integrated textbooks, usually with integration between subject areas (either multidisciplinary or interdisciplinary in nature), are intended primarily for facilitating learning rather than teaching. Therefore, the major characteristics of such textbooks are:

- The concepts from different subject areas are arranged around a theme which is familiar and/or joyful to the student in his/her real life. The themes may be water, fire, market, any festivity, circus, a comic story, a cartoon, a puzzle, a popular poem and the like.
- The themes are based on contexts related to the real life situations and as such provide ample scope to the student for meaningful learning.
- Each lesson is profusely illustrated with pictures, diagrams, examples, etc. Each illustration is appropriate to the topic and there are provisions for utilizing these illustrations in learning activities.
- Each lesson has inbuilt provision of learning activities which have to be performed by the learner while going through the text. These activities are diverse in nature. Some of these activities are drawing, painting, composing creative passages, developing models, collecting materials and information, matching figures, words and events and the like. Integration without activity is absurd (Why??).
- There are interactive elements inbuilt within the text which enables a student to interact with others and also with him/her. Examples of such provisions in the text are “frame and ask questions”, “have dialogue with the teacher”, “participate in group work with peers”, “think for a while” etc.



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- A variety of practice problems spread across the text (and not always placed at the end of the text) keeps the interest of the students on the lesson while ensuring understanding of the concepts embedded in the text. In a sense, the workbook is inbuilt in the textbook.
- Integrated textbooks are being used in the lower grades of the primary schools in several states of our country. The EVS course of classes I and II has been integrated in the textbooks of Language and Mathematics developed by the NCERT. The EVS textbook of classes IV and V integrates Science and Social Science.

E4. State at least two differences between integrated and non-integrated text books

We have already discussed the materials to be used in learning and teaching process in Unit-6. There is no material which is specific to integrated learning. It is how we use the material. You have to think how a particular material can be used to help the children in acquiring different learning outcomes in different subjects. Let us take an example.

The material is '*soap with its wrapper*' which can be used for different purposes of learning and teaching as follows:

- *Language:*
 - Explanation about the use of soap,
 - Formation of words.
 - Identification of letters.
- *Mathematics:*
 - The price written on the wrapper of the soap can be used for the purpose of addition, subtraction, multiplication and division,
 - The explanation of M.R.P.(minimum retail price): What are retail and wholesale prices? How can profit or loss be calculated with M.R.P? etc.,
 - The shape of the cover can be used to describe cuboid,cube etc.,
- *General Science:*
 - What are the contents used to prepare the soap.
 - Distinguish between hard water and soft water with respect to the use of 'soap'.
- *Social Science:*
 - Place of production of soap.
 - Raw materials used to prepare soap.
 - Route and process of transportation.

 **ACTIVITY-4**

Select any TLM from your surrounding and list out ways you can use it for teaching and learning different subjects.

**Notes**

E5. Which one characteristic of the integrated textbook you consider to be most important?

Give reasons for your answer.

Since, all our real life experiences are not compartmentalized into separate curricular subject areas, integrated approach to learning and teaching is most logical and most likely to lead to meaningful and holistic learning. Whether there is any integrated textbook available or not, it is the integrated approach to teaching and learning in and out of the classroom that makes the difference in quality of learning especially at the early stage of school learning.

9.6 LET US SUM UP

- Integrated learning refers to education that is organized in a meaningful and holistic manner by association of several related concepts drawn from different subject areas focusing on a broad theme which has real life significance for the learner.
- Integrated curriculum is of three types: associating the concepts and skills within same subject (Interdisciplinary), of different subjects (multidisciplinary and interdisciplinary) and beyond the subjects (Trans-disciplinary).
- Integration within one subject area or Interdisciplinary Integration is a process of integration where the knowledge and skills of same subject are connected together during the teaching learning process.
- Multidisciplinary and interdisciplinary integrations are processes (with finer differences) of integrating the knowledge and skills of two or more different subjects during the teaching and learning process.
- Trans-disciplinary integration helps in making learning more meaningful, contextual and more real life oriented while reinforcing the curricular learning outcomes, through acquiring more skills and competencies than planned.
- Integrated textbooks have unique features for encouraging and enhancing learning by associating various elements and activities.



9.7 MODEL ANSWERS TO CHECK YOUR PROGRESS

E1. Any three of the following:

- Combining related concepts from different subject areas.
- Developing teaching-learning on real life themes going beyond the textbook experiences.
- Combining different methods like projects, observation etc.
- Flexibility in time schedules and grouping students.

E2. Any two points from the Table 9.2

E3. You can develop your plan in which you may follow the steps as stated below:

- Selecting the project relating to life context
- Identify the related learning concepts and skills
- Planning activities to link the identified concepts and skills.
- Preparing time schedule and group formations for the transaction of activities.

E4. Between non-integrated and integrated textbooks

- The former is based on subject specific contents whereas the latter is based on real life themes/context/situation.
- The former is based on given knowledge/skill and the latter is based on the explorative knowledge/skill.
- There is no scope for learning activities within the text of the former whereas the latter is filled with learning activities.
- There is hardly any interactive space in the former while there are interactive spaces for one-to-one and group interactions in the latter.

9.8 SUGGESTED READINGS AND REFERENCES

- (i) Beane, James A. (1977). Curriculum Integration: Designing the Core of Democratic Education. New York: Teachers College Press.
- (ii) Drake, Susan M., and Burns, Rebecca C. (2004). Meeting standards through integrated curriculum. Alexandria, VA: ASCD.



- (iii) Humphreys, A., Post, T. and Ellis, A. (1981). *Interdisciplinary Methods: A thematic approach*. Santa Monica, CA: Goodyear Publishing Company.
- (iv) Jacobs, H. H. (1989). "Design Options for an Integrated Curriculum." In H. H. Jacobs(ed.) *Interdisciplinary curriculum: Design and implementation*, (pp.13-24). Alexandria, VA: ASCD.
- (v) Shoemaker, B. (1989). "Integrative Education: A Curriculum for the Twenty-First Century." *Oregon School Study Council*, 33(2).

9.9 UNIT END EXERCISES

1. What are the need of integrated curriculum and integrated teaching-learning process in the early classes of primary schools?
2. Describe briefly the different types of integrating curriculum and teaching learning processes highlighting their respective utility in classroom processes.
3. What type of textbook is more preferable for the beginners at the elementary level? Why?