Department of Distance Education

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Lesson No.

2.1 : Approaches to curriculum development: subject centered and learner centred; content Organizations

2.2 : Spiral Curriculum: Unitization of Syllabus, integration of school curriculum

2.3 : Integration of school curriculum with Futuristic needs; vocational bias and skill development curriculum.

2.4 : Curriculum for children with special needs: Purpose and importance, Curriculum needs of gifted, visually challenged and slow learners.

Lesson no. 2.1	**Author: Dr. Shalu Goyal**

Approaches to curriculum development: subject centered and learner centered; Content Organization

Structure

2.1.1 Objectives
After going through this lesson you will be able to
  1. Define the different approaches to curriculum development.
  2. Write the different types of approaches to curriculum development
  3. Explain the learner centered approach to curriculum development.
  4. Explain the teacher centered approach to curriculum development.
  5. Explain the process of content organization in curriculum development.

2.1.2 Introduction

There are a number of approaches to curriculum development or curriculum designs that a curriculum developer can choose from. These designs may be broadly categorized into the following major groups:

1. Traditional or subject-centered designs,
2. Learner-centered designs,
3. Problem-centered or
4. Society-centered designs, and
5. Unified designs.

But here only subject centered and learner centered approaches to curriculum development or curriculum designs are discussed.

2.1.3 Subject centered curriculum

The traditional model was laid out by Ralph Tyler in 1949 in his seminal book, *Basic Principles of Curriculum and Instruction*, and is generally considered the mainstream way to conceptualize curriculum development. The approach has a "subject-centered" orientation: students gain mastery of subject matter predetermined by a set of "experts." Curriculum is organized around content units and the sequence of what is taught follows the logic of the subject matter (Knowles, 1984).

2.1.4 Characteristics

1) The main goal and purpose is to standardize students, to make them alike with a "core curriculum." A large amount of meaningless testing is imposed on teachers to inflict on students.

2) Teachers have big classes that restrict teachers from getting to know each child well enough to form a close relationship.

3) Parents are usually not involved, except to help their child with the teacher-assigned homework.

4) Teachers spend much time imparting the state curriculum.

5) They focus on what students don't know and can't do. Students are required to do teacher-assigned homework.

6) Students are not encouraged to ask questions. Learning, merely to pass tests, is shallow and temporary.

2.1.5 Advantages

1. One of the advantages of the traditional approach is that students like it: they're used to it and it fits their idea of what school should be.

2. Learning discrete skills in a step-by-step fashion lends itself to traditional testing.

3. Results of the students can be easily quantified and explained to the policy makers and curriculum designers as program outputs.

4. Program administrators can use the results of traditional tests to justify their programs' achievements.

5. Students, tutors and teachers can point to quantifiable progress, and that is certainly motivating.

6. Traditional curriculum also lends itself well to mass production: publishers can produce workbooks o different subjects that break down reading or math into subskills and processes, which students and teachers can easily navigate or use.

7 The traditional approach is efficient in a field in which resources for staff development are scanty.

8. While teachers can create their own materials using a traditionalist approach, they can also draw upon commercially or locally developed materials and methods.

9. Volunteer tutors and adult basic education teachers without much training or time can easily teach from an existing curriculum.

10. The traditional approach is also accessible.

11. Commercially produced traditional curricula and materials, via workbook or computer, are widely available to learners who are interested in studying on their own.

12. Students don't have to wait for a class to start or fit it into their schedules, especially in case of adult learners.

2.1.6 Criticism

1. Among the limitations of the subject-centered curriculum is failure to consider the unique needs and interest of the students and its detachments from contemporary events in the world.

2. Perhaps the most severe criticism against the Subject-oriented learning has combined with the increasing fragmentation of knowledge to create an information mania in our schools that makes simply digesting facts a priority and eliminates consideration of the goals to which facts and ideas might be applied.

3. Research indicates that while many underachieving students have poorer auditory and visual skills, their kinesthetic and tactile capabilities are high. Implications are that teachers may need to use a greater variety of instructional methods.

4. Obviously, the subject-centered curriculum design makes comparatively little use of such necessary reinforcement.

2.1.7 Learner centered curriculum

We can only wonder how many students have been cheated of developing their full potential in our subject-centered system of education. In Learner centered curriculum- The education focuses on the needs of each student, who s/he is, what s/he can do and what s/he wants to become. Teachers are regarded as professionals.The learner-centered design may be based on the anticipated needs and interests of the learners based on their stage of development. Usually, this curriculum is built upon the normal activities children engage in, such as playing, storytelling, drawing, and the like. In this kind of curriculum, content is not organized into subjects like mathematics, English, or science. Instead, content may be subdivided into course works such as storytelling, playing, singing, etc. The three Rs will be integrated in these activities.

2.1.8 Characteristics and Advantages

1. The main goal and purpose is human development – to help each student find and develop human powers, one's unique talents and aspire to be a contributor to society. Students have many choices of subjects to study. Teachers help students evaluate their own work.

2. Classes are small enough for teachers to get to know each child well and work with parents to help each student see a vision of great, unlimited potential.

3. Teachers "draw forth" from students their concerns, interests and questions. They try to learn what each student already knows and is good at doing. Students often spend time doing self-chosen home study.

4. Students surprise parents and teachers with how much they can accomplish when their curiosity and creativity are stimulated and appreciated.

5. Greater emphasis on the students' needs,

6. The research on teaching (e.g. action research) can concentrate on more relevant issues;

7. A more realistic description of the role of teachers who have always been and will always be curriculum developers;

8. The development of instruments which help teachers to do their jobs more efficiently;

9. A stronger demand on universities to define their requirements more thoroughly;

10. This category is based on the actual needs and interests of the learners as they arrive in school. They choose what they want to learn and the teacher merely serves as a guide (e.g., where to get the necessary information). After a learner has completed his investigation of the problem that he has chosen, he makes a presentation to the teacher or takes a test on the problem.

11. With this design, no curriculum plan is made by the teacher because the learner himself decides what he wants to learn.

2.1.9 Criticism

Learner-centered designs have been criticized as neglecting the intellectual development of the learners, especially in the elementary classes where the learners are supposed to be equipped with the basic understanding and skills needed for the next higher level of schooling. So the curriculum in the higher classes can involve some elements of learner-centered design. These educational levels also make provision for broad fields design and for society-centered design, through the social action/community outreach program. This shows that the curriculum can be combination of different designs (Reyes, 2000)

2.1.10 Content Organization

The objective of content organization is to gather a list of the necessary content and to organize that content relative to your students' needs. This process works "hand in glove"(together) with the process of defining your class or level of students. Both these processes require that you have defined the Purpose of your content.

2.1.11 Course content selection and organization

You are working on a course design, and now it is time to decide on the content and how to organize it. As is often the case, we have far more to say about a topic than we can possibly cover in a term. One rule of thumb is to have students spending from 8-10 hours per week on your course, including in-class time. So how to decide? Following are some tips to help with these time-consuming yet crucial tasks.

a. Finding Content

- **Check in your department for past syllabi** if you are offering a pre-existing course. Also be sure to check your institution's course calendar and read the course description to ensure that your course meets that stated description.

- **Locate similar courses at other institutions** if your course is new (or you would like some new ideas). Talk to your colleagues in your discipline area or go to the Web to find courses.

- **Review textbooks in your discipline area.** This can be a very easy way to locate not only possible content to cover but also ready-made organizational structures. Publishers will send out texts for you to review. Keep your students in mind when choosing texts –

not only their abilities and past experience with the topic areas but also their time limitations.

▪ **If texts are not available or not appropriate, you may need to create a reading package or course notes.** It will take more time to compile this type of resource, so set aside a few months for this activity. Also, be sure to factor in the time that may be needed to receive copyright clearance for copying and selling published materials. Your institution may have a copyright agreement which makes this less of an issue, but be sure to investigate what is possible in advance so you avoid basing part of your course on materials that you cannot easily secure for the students.

b. Selecting Content

Set some type of criteria to help select appropriate content for your course. Course design literature suggests the following criteria. Course content should:

▪ Fit with your course learning goals

▪ Have importance in the discipline

▪ Be based on or related to research

▪ Appeal to student interests

▪ Not overlap excessively with student past experience or knowledge

▪ Be multi-functional (help teach more than one concept, skill, or problem)

▪ Stimulate search for meaning

▪ Encourage further investigation

▪ Show interrelationships amongst concepts
Within each class, also consider how to organize your material so that students can both learn and retain it. Different philosophies of learning are represented. Some ideas to consider are:

▪ **Start with what students already know** and then move to the abstract model or theory.

▪ **Start with concrete examples,** such as cases, news items, or other real-world situations, then generate the abstract concepts.

▪ **Start with a solution, conclusion, or model** and work backwards to the question.

▪ **Give students time to reflect,** individually or through discussion, on what and how they are learning.

▪ **Build in practice time**, with feedback, either in class or on assignments so that students learn to work with the concepts and can receive assistance with problem areas.

2.1.**12 Seven Criteria for the Selection of Subject-matter or Content of the Curriculum**

The selection of subject matter for micro curriculum employs the seven criteria below. For the macro curriculum, the subjects needed for the curricular program or course.

1. Self-sufficiency

To help learners attain maximum self-sufficiency in the most economical manner is the main guiding principle of subject matter or content selection (Scheffler, 1970) as cited by Bilbao et al. (2008). Although the economy of learning implies less teaching effort and less use of educational resources, students gain more results. They can cope up with the learning outcomes effectively.

This criterion means that students should be given a chance to experiment, observe, and do field study. This system allows them to learn independently.

With this principle in mind, I suggest that for a high school curriculum or preparatory year, there should be a one-day independent learning activity each week. However, this should be carefully planned by the teacher. When the students return, they should present outputs from the activity.

2. Significance

The subject matter or content is significant if it is selected and organized for the development of learning activities, skills, processes, and attitude. It also develops the three domains of learning namely the cognitive, affective and psychomotor skills and considers the cultural aspects of the learners. Particularly, if your students come from different cultural backgrounds and races, the subject matter must be culture-sensitive.

In short, select content or subject matter that can achieve the overall aim of the curriculum.

3. Validity

Validity refers to the authenticity of the subject matter or content you selected. Make sure that the topics are not obsolete.

For example, do not include typewriting as a skill to be learned by college students. It should be about the computer or Information Technology (IT).

Thus, there is a need to check regularly the subject matter or contents of the curriculum, and replace it if necessary. Do not wait for another 5 years to change it.

Modern curriculum experts are after current trends, relevance and authenticity of the curriculum; otherwise, the school or the country becomes obsolete.

4. Interest

0This criterion is true to the learner-centered curriculum. Students learn best if the subject matter is meaningful to them. It becomes meaningful if they are interested in it. However, if the curriculum is subject-centered, teachers have no choice but to finish the pacing schedule religiously and only teach what is in the book. This approach explains why many fail in the subject.

5. Utility

Another criterion is the usefulness of the content or subject matter. Students think that a subject matter or some subjects are not important to them. They view it useless. As a result, they do not study.

Here are the questions that students often ask: Will I need the subject in my job? Will it give meaning to my life? Will it develop my potentials? Will it solve my problem? Will it be part of the test? Will I have a passing mark if I learn it?

Students only value the subject matter or content if it is useful to them.

6. Learn ability

The subject matter or content must be within the schema of the learners. It should be within their experiences. Teachers should apply theories in the psychology of learning to know how subjects are presented, sequenced, and organized to maximize the learning capacity of the students.

7. Feasibility

Feasibility means full implementation of the subject matter. It should consider the real situation of the school, the government, and the society, in general. Students must learn within the allowable time and the use of resources available. Do not give them a topic that is impossible to finish.

For example, you have only one week left to finish the unit but then, the activities may take a month for the students to complete. Thus, this requirement is not feasible.

- Do not offer a computer subject if there is no electricity in the area, or there are no computers at all.
- Further, feasibility means that there should be teachers who are experts in that area. For example, do not offer English for Business Communication if there is no teacher to handle it.
- Also, there is a need to consider the nature of the learners. The organization and design of the subject matter or content must be appropriate to the nature of students.

In conclusion, teachers in elementary and high school are not directly involved in the selection of subject-matter because there are already lesson plans made by the

Department of Education. All they have to do is to follow it. However, they can also customize or modify the lessons if their department heads or principals allow them.

But, this is not the end of the process yet! The selection of the subject matter or content of the micro and macro curriculum is only one of the considerations in designing the curriculum.

2.1.13 Suggested Questions
1. Define the different approaches to curriculum development.
2. Write the different types of approaches to curriculum development
3. Explain the learner centered approach to curriculum development.
4. Explain the teacher centered approach to curriculum development.
5. Explain the process of content organization in curriculum development.

2.1.14 Suggested readings
1. Aurora, G.L. 1995. *Child Centred Education--For Learning Without Burden*. Gurgaon: Krishna Publishing Co.
2. National Council of Educational Research and Training. 1988. *National Curriculum for Elementary and Secondary Education: A Framework*. New Delhi: NCERT.
3. National Council of Educational Research and Training. 2000. *National Curriculum Framework for School Education*. New Delhi: NCERT.
4. Saxena, K.P.C. (ed.). 1994. *Human Rights--Perspective and Challenges*. New Delhi: Lancer Books.
5. Subramanian, S. 1999. *Human Rights: International Challenges. National Curriculum*

Lesson no. 2.2   **Author: Dr. Shalu Goyal**

Spiral Curriculum, Unitization of Syllabus, Integration of School curriculum with

Structure:
2.2.1   Objectives
2.2.2   Meaning of Spiral curriculum
       2.2.2.1 Main characteristics of Spiral Curriculum
       2.2.2.2 Advantages of Spiral curriclum
       2.2.2.3 Practical Implications of Spiral curriculum in different subjects
       2.2.2.4 Limitations of Spiral Curriculum
2.2.3   Unitization of Syllabus
       2.2.3.1 Major characteristics of Unitising syllabus
       2.2.3.2 Advantages of unitised syllabus
2.2.4   Meaning of Integrated curriculum
       2.2.4.1 Definitions of Integrated curriculum
       2.2.4.2 Approaches to integration
       2.2.4.3 Benefits of Integrated curriculum
2.2.5   Suggested Questions
2.2.6   Suggested Readings.

2.2.1   Objectives
       At the end of the lesson student will be able to:
1. Understand the concept of sprial curriculum
2. Describe unitization of syllabus
3. Define integrated curriculum
4. Discuss appraches of integration

2.2.2   Meaning of Spiral Crriculum
Spiral curriculum is an approach to education that introduces key concepts to students at a young age and covers these concepts repeatedly, with increasing degrees of complexity. This approach is also known as a "spaced" or "distrubuted" approach. It contrasts with "blocked" or "massed" curricula, which do not introduce difficult concepts until the student has reached a higher level of education.
Corpus and Lucas's definition- According to them, spiral curriculum is revisiting the curriculum by teaching the same content in different ways depending on students' developmental levels.

According to Jerome Bruner (1961) Spiral curriculum refers to the idea of revisiting basic ideas again and again, building upon them and elaborating to the level of full understanding.

According to Hilda Taba (2003) The concept of a spiral curriculum is one in which there is an iterative revisiting of concepts, subjects or themes throughout the course. A spiral curriculum is not simply the repetition of a concepts taught, but a deeper understanding of a concept with each successive encounter building on the previous encounter.

2.2.2.1 Main characteristics of Spiral Curriculum

1. In a spiral curriculum topics are revisited during the course; difficulty levels increase as topics are revisited; and new learning is related to previous learning, increasing students' competence
2. Through these repeating, recounting or revisiting of topics, learners will have a clearer and progressive understanding thus enhances learning.
3. Nearly any subject can be taught with spiral curriculum. Such curricula break down key concepts into "strands," ideas that are taught year after year, adding to the depth of knowledge each year.
4. For example, Everyday Mathematics, a curriculum designed with the spiral approach, organizes its lessons around six broad categories (strands) of mathematical concepts that are taught in multiple units each year. Rather than waiting until students have mastered addition, subtraction, multiplication and division.
5. Everyday Mathematics introduces algebraic concepts as early as kindergarten, when students are taught to recognize patterns and find rules governing specific mathematical functions.
6. The curriculum returns to these ideas frequently, adding new information each year and setting higher comprehension goals for each grade level as students gain mastery of the subject.
7. It aims at multi- Professional learning, where students from different healthcare professions learn together, is to promote multi professional team work in graduates, but evidence is lacking as to whether this works.
8. A curriculum as it develops should revisit this basic ideas repeatedly, building upon them until the student has grasped the full hold on the topic.

2.2.2.2 Advantages of Spiral Curriculum

The benefits ascribed to the spiral curriculum by its advocates are:

1. The information is reinforced and solidified each time the student revisits the subject matter.
2. The spiral curriculum also allows a logical progression from simplistic ideas to complicated ideas.
3. Students are encouraged to apply the early knowledge to later course objectives.

4. In addition, the spiral curriculum incorporates many research-based approaches from cognitive science that have been linked, individually, to improved student performance as well.

5. Revising old material for understanding new material to access previous lecture notes and presentations.

6. *Most of our work is a build up on material that we have already covered and the need to go over basic sciences is an absolute necessity when it comes to the beginning of every block.*

7. *Spiral curriculum is relevant and practical because it allows one to go back and fill the gaps they had in the past.*

8. *In our spiral learning, we will constantly need to refer back to and consolidate prior knowledge with the new material. Having the lecture notes especially will ensure that this referring back process is swift and that we stick to the core, which can be found in the lectures!*

9. *We can learn and reveiw old subjects that we dealt with but cannot remember well. Helps us to understand new material.*

10. *Inside the new curriculum is the spiral of learning where you build upon what you have learnt from the previous year.*

2.2.2.3 Practical Implications of Spiral curriculum in different subjects

This concept of spiral curriculum can be understood easily through following subjects : math, reading, science, and social studies.

Mathematics

Spiral curriculum is probably most easily seen in mathematics because most topics in math build off of each other with increasing complexity. For example, in first grade and the beginning of second grade, students learn simple addition and subtraction facts. These facts are memorized by students so that they no longer have to rely on counting on fingers or using number lines. Addition and subtraction is then made more complex by introducing two digit numbers.

Students need to rely on their knowledge of the facts they have memorized in order to do the more complex problems. Accordingly, concepts incorporating addition and subtraction become more complex as students move through the grades. The early skills of adding and subtracting in elementary school grow and spiral as the years go by, to be used in algebra in high school and beyond.

Reading

Students learn to read in the early years of elementary school. The focus of a reading curriculum in kindergarten, first class, and second class is usually teaching students the skills they need to independently and successfully read a text. After students are taught to read, they are asked to read to learn new things. This is an example of spiral curriculum in reading: learning to read evolving into reading to learn.

For example, students learn to identify a sequence of events when they are learning how to read. In later classes, students will recognize sequences of events even taken out of

order to understand more complicated books and stories. The reading curriculum spirals out from simple comprehension skills to more complicated independent reading that requires the use of those skills.

Science

Finding examples of spiral curricula in play in math and reading are relatively easy; it is more difficult to do in science and social studies. Nonetheless, it can and should be done because these subjects can be incredibly complex. In many cases, building upon simpler skills sets over time can make difficult content more accessible to student comprehension.

In biology, for example, A lesson in first class might focus on what plants need to grow, including sunlight. In third class, students will then learn about photosynthesis, which explains *why* plants need sunlight to grow. In sixth class, students will learn about the cellular structure of plants, which will give them a more complex picture of plant biology. Finally, students in high school will learn about organic chemistry in plants, completing the picture.

2.2.2.4 Limitations of Spiral Curriculum

1. The role of structure in learning and how it may be made central in teaching. This approach taken should be a practical one.
2. 'The teaching and learning of structure, rather than simply the mastery of facts and techniques, is at the center of the classic problem of transfer.
3. If earlier learning is to render later learning easier, it must do so by providing a general picture in terms of which the relations between things encountered earlier and later are made as clear as possible.
4. Schools have wasted a great deal of people's time by postponing the teaching of important areas because they are deemed 'too difficult'.
5. Any subject can be taught effectively in some intellectually honest form to any child at any stage of development.
6. One of the major problems with the "spiral" math curriculum is that in every grade, limited and precious classroom math time is being wasted on unnecessary math concepts, given the age of the students. Those who have put the spiral curriculum together have moved math education from practical, daily skills to incorporating many advanced and unnecessary skills (for the age of the students). Many of these topics could be saved for higher classes and students would arrive better prepared, and intellectually ready.
7. When subjects are taught in such manner, the tendency is that there maybe too many repetitions that would reduce teaching and learning time.
8. Learners may be also find the design a bore or may not stimulate their interest in the subject since it was taught to them the previous grade.
9. when students are taught to master specific concepts or skills, it can also reduce topics that can be covered. There would be lesser topics to be discussed and sometimes at a superficial level only.

2.2.3 Unitisation of syllabus

Over recent years, there has been a clear trend in the development of the upper secondary curriculum to increase the use of modular or unitised qualifications. In particular, in the 1980s much interest was shown in modular or unitised courses and many such courses were developed and introduced in secondary schools. As a result, the rationale for unitising course or modularisation and many of the issues arising from it were addressed (for example Moon, 1998; Warwick, 1987).

2.2.3.1 Major characteristics of Unitising Syllabus

1. All the themes should be broken down into units of equal size.
2. All the sub themes should be covered under the main theme of a unit.
3. In a unit study you take one topic and study it in depth, exploring all aspects of it across the curriculum. For example, a unit study on Outer Space would delve not only into the science aspect of the topic, but also into the history, math, reading, writing, music, and art surrounding it. As a result, the student begins to see the topic as a big picture, not just the individual parts that make up the whole.
4. A unit study or unitization is simply an extensive study of one topic (or unit) and the integration of all subjects (social studies, science, language arts, math, , music, art, etc.) around that topic.
5. This allows the child to see the purpose for learning because the disciplines (subjects) are applied and the knowledge is interconnected, creating a more logical and natural way to learn.
6. It is the opposite of the fragmented method of spending 50 minutes on history, which is totally unrelated to the next 50 minutes of science, which is totally unrelated to the next 50 minutes of literature, and so on.
7. The unit approach, which emphasizes content mastery, can be developed for gifted education through seven steps, including developing a rationale and selection criteria for unit topics and devising specific lesson plans which permit flexibility to accommodate a variety of interests and ability levels.
8. Within a unifying theme, a unit guides the sequence and pace of skills and knowledge acquisition described in more granular detail by lesson plans.
9. unit of study approach to teaching writing offers students an inquiry-oriented experience for learning how to grow and develop as writers in a predictable format (Ray, 2006).
10. The main premise behind a unit of study approach is that students benefit from closely studying the kinds of writing they will eventually be writing themselves.
11. . A unit of study framework provides the opportunity for students to actively study and inquire about writing that can be found in the real world.

2.2.3.2 Advantages or merits of Unitised syllabus

It allow us to pursue a topic in depth, while maintaining the interrelatedness of the disciplines. For example, you could develop your child's recent stamp collecting interest into a unit study by incorporating or covering appropriate literature (reading), monetary equivalents (math), geography, different currencies over time (history), classification (science), art, and communication skills by requiring a report (writing/grammar) or speech. Unit studies typically take advantage of hands-on activities, field trips, and other forms of investigation.

There is no shortage of resources when it comes to purchasing preplanned unit studies or helps for developing your own. Chances are you, too, will incorporate at least one unit study during your family's homeschooling adventure.

The following are the advantages of unitization of syllabus that can be implemented in any method of educating:

1. **In-depth Studies**

So many times when following a typical scope and sequence, we only scratch the surface of a topic before it is time to move on to the next one. Whatever our styles, in a tutorial situation we can stay with the same subject matter until all of our questions have been answered and our curiosity is satisfied. As a result, we will have become intimately familiar with our subject.

2. **Investigation**

The one who does the research is usually the one who learns the most. Unit studies provide an opportunity to encourage individual investigation. Children are more likely to want to participate in finding their own answers when it pertains to a topic of their interest.

3. **Application of the Learning Tools**

One of our goals is to help our children develop their skills. Skills are usually best developed in a systematic order. But this does not mean that they have to be applied to an arbitrary topic dreamed up by a curriculum provider. Writing finds new life when the person performing the action is writing about something he has been investigating and in which he has an interest. Reading can take on a life of its own when an interest is fed with stage-appropriate (or maybe just a little advanced) literature. We can also have our children apply the skills they are developing in math to situations that hold their interest.

4. **Family Time**

History, literature, and the arts are examples of areas in which the entire family can learn together. Assignments can easily be fine-tuned to fit each child's level while everyone studies the same topic.

5. Writing experience

Another important premise within this approach is that students are allowed to select the topics for their writing, honoring their voices and the ideas that matter to them. In this way, writing builds bridges between students' out-of-school lives and interests and their in-school learning experiences.

6. Importance to reading

Numerous young adult authors speak to the importance of reading in inspiring and influencing their writing. Young adult author Chris Crutcher advised students to "read a lot, especially in the area in which you want to write" (The New York Public Library, 2002, n.p.),

7. Supporting academic momentum

For students who do not display academic momentum, or for reluctant learners, the unit of study framework fosters the necessary integration of "will" and "skill." The unit of study approach supports the development of will, in that students select topics of importance to them.

8. Self efficacy

Students who demonstrate academic momentum also have self-efficacy (knowledge that they can perform the task at hand)and self-regulation (knowledge and awareness of how to help themselves while working). Students' self-efficacy develops as they immerse themselves in and analyze text and as they write in a supportive environment. There is an active teaching element to this process; writing is not just assigned. Studying writing in this way also fosters self-regulation.

9. Gathering texts from quality literature

They can make use of quality literature (living books).High quality texts allow students to study how authors write well. Teacher actively searches for high quality texts. Students may also searches for high quality texts.. We wanted students to see their experiences in the texts we selected and also show them that memoirs are not about flashy experiences or expensive vacations; they are about everyday experiences or even quiet moments in life. We found examples in which the authors remembered a special pen, a football game, taking a lifeguard test, and an important conversation with a friend.

10. Conferences

Throughout the unit, we held small group and individual conferences to address students' specific writing needs. We avoided vague good/ bad conversations by asking students to pose specific questions about their drafts.

2.2.4 Meaning of integrated curriculum-

Today, there is a focus on an integrated curriculum. An **integrated curriculum** is described as one that connects different areas of study by cutting across subject-matter lines and emphasizing unifying concepts. Integration focuses on making connections for

students, allowing them to engage in relevant, meaningful activities that can be connected to real life.
or
Integrated Curriculum that is organized in such as 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

2.2.4.1 Definitions of integrated curriculum
A basic definition is offered by Humphreys (Humphreys, Post, and Ellis 1981) when he states, "An integrated study is one in which children broadly explore knowledge in various subjects related to certain aspects of their environment". He sees links among the humanities, communication arts, natural sciences, mathematics, social studies, music, and art. Skills and knowledge are developed and applied in more than one area of study
According to Good (1973) "a curriculum organization which cuts across subject-matter lines to focus upon comprehensive life problems or broad based areas of study that brings together the various segments of the curriculum into meaningful association"
Jacobs(1989) defines 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".

2.2.4.2 Different approaches to Integration
There are mainly four approaches to integration.

Different approaches to Integration
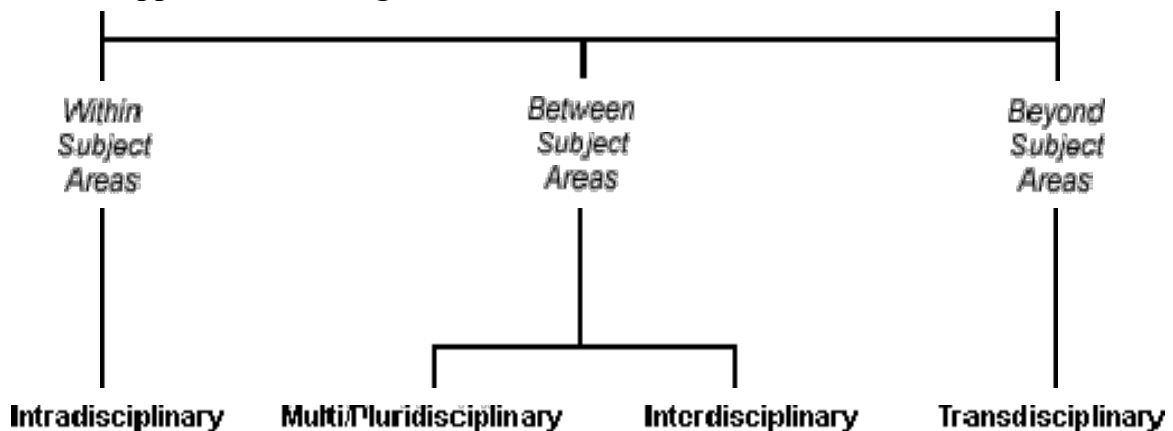
1. **Intradisciplinary approach**
2. **Multidisciplinary approach** or **Pluridisciplinary approach**
3. **Interdisciplinary approach**
4. **Transdisciplinary approach**

1. **Intradisciplinary approach** in Intradisciplianry approach, teachers integrate subdisciplines into a subject area. This is a common approach to integrated curriculum because it takes a larger theme and integrates the subthemes as well. Another approach is Fusion, which is when teachers blend different skills, knowledge, etc. into the overall curriculum. Fusion is a good way to help students learn basic skills, and help the students to learn how to use them for all different subjects.

2. A **multidisciplinary approach** focuses primarily on the disciplines. Teachers who use this approach organize standards from the disciplines around a theme. To create multidisciplinary integrated curriculum, teacher develops a central theme focused on social studies and teach history, geography, economics and government in that thematic based unit. Teacher may also achieve this by creating a mathematics thematic unit that teachers the relationship between fractions, percents, decimals and ratios. This will help students make connections to many disciplines. A theme can be for example life in the India -cultural understanding where students look at all aspects of the culture. Some advantages of using a theme based model include that it is easier to connect the curriculum with national standards and state frameworks. Another advantage is that it is easier for students to make connections among objectives from various disciplines.

3. In an **interdisciplinary approach**, teachers organize the curriculum around common learning across disciplines. They chunk together the common learning embedded in the disciplines to emphasize interdisciplinary skills and concepts. Thinking about an interdisciplinary unit can be just as fun. Focus on creating a lesson on sculpting or singing while still teaching math and communication concepts. Try having your students make wind or rain machines while still teaching the interdisciplinary skills of numeracy and communication of ideas. The idea of an interdisciplinary approach is to have students learn more than just the immediate content being taught. They can learn interdisciplinary skills such as thinking skills or research skills that are integrated among all disciplines. Teachers use this type of integration when they want to make the curriculum work across different types of disciplines by using common teach a learning skills or concepts. [A number of teachers would be given a group of students and topic to the group of students teach a.] The problem here is that subjects still retain their independence and unless teachers collaborate, team teaching may result in misunderstandings and different teaching philosophies colliding.

4. **Transdisciplinary approach** With Transdisciplinary Integration, the teachers mold the curriculum around the student's questions about what they would like to learn. One approach to this is Project-Based Learning, that lets the students look at a problem and decide what they would like to learn about the subject. In lecture we learned Transdisciplinary is rarely used in integrated curriculum because it is hard to meet the state standards when the students are designing the curriculum e.g for teaching the concept of equator, teacher looked online and found an interactive map for kids. It takes what students are learning to a level that is easier for students to understand. Here students work together to solve a real life problem. In this type of model ideally teachers would place technology at the core of the curriculum. Students would not look at just one aspect but use the real life problem to look at all aspects of the problem.The advantages of using the Problem Based model is that it offers great potential for looking at and using relevant and highly engaging problems. For example, Climate Change where students would work together to look at all aspects as changes in weather, reduction or increase of temperature or rainfall. However a disadvantage could be that it may not meet state frameworks or national standards for completing the syllabus in a particular time and in a particular class.

The other approaches are: service learning, learning centers, and theme-based units. These all use one larger subject, and then break it down to work into other subjects.

Example of Integration

Benefits or Advantages of integrated curriculum-
it is very important to integrate curriculum.

1. A student can learn much more in a classroom where a student can learn math, science and reading all in one lesson or teaching a theme-based unit that focuses on cultural diversity and incorporates core content area topics.

2. When students are taught through an integrated curriculum, then they shows higher signs of retention at an increased rate than when an integrated curriculum was not implemented. The reason for this is because they were able to more closely relate to content and make real world connections in integrated curriculum approaches.

3. Students not only connect and create more real world connections in integrated classrooms, but they are also more actively engaged.

4. Creating an integrated curriculum means that teachers are charged with having to create challenging, fun, meaningful tasks that help students connect to information.

5. Creating a solar system unit that also requires oral language development and practice, reading comprehension skills and mathematics, can engage students far more than just a lesson on the solar system alone.

2.2.5 Suggested Questions

Q.1. Define spiral Curriculum. Discuss its characteristics along with advantages & limitations.

Q.2. What is unitization of Syllabus? Describe its characteristics along with advantages.

Q.3. Define Integrated curriculum. Explain different approaches to Integration of curriculum.

2.2.6 Suggested Readings.

1. Aurora, G.L. 1995. *Child Centred Education--For Learning Without Burden*. Gurgaon: Krishna Publishing Co.
2. National Council of Educational Research and Training. 1988. *National Curriculum for Elementary and Secondary Education: A Framework*. New Delhi: NCERT.
3. National Council of Educational Research and Training. 2000. *National Curriculum Framework for School Education*. New Delhi: NCERT.
4. Saxena, K.P.C. (ed.). 1994. *Human Rights--Perspective and Challenges*. New Delhi: Lancer Books.

Lesson no. 2.3

Futuristic curriculum needs; vocational bias & skill development curriculum

Structure

2.3.2 Introduction:

As we know that curriculum includes the totality of experiences that a child receives through various activities he do in the classroom, library, laboratory, workshop, assembly hall, play field etc. The fast growing society and various technological advancements have influenced education system so much, that only classroom learning is not sufficient for them. There is no need to incorporate certain vocational and skill education for them so that they can be prepared for life, So that the training they got will help them to get jobs in the society. In this chapter we will discuss about these futuristic curriculum needs, skill development programme and vocational education etc.

2.3.3 Futuristic curriculum needs

The Futuristic century curriculum should be fluid, shaping and reshaping itself in response to students' self-direction and unpredictable events. It should be passion-driven, as teachers guide students in pursuit of what interests them most.It should provide opportunities for students to build relationships, network, and act collectively. Students should be asked to synthesize information and demonstrate self-reliance. Teachers need to teach our students empathy for people from diverse backgrounds, because in the

future, a great deal of their interactions will be carried out in online spaces, where they will be collaborating with people around the world.

1. **Need to participate in face-to-face learning** and build deep relationships with other people who we trust and with whom we can take learning risks and share and demonstrate what we know and care about.
2. **Need to learn through global communities of inquiry.** These are communities one need to find or create for ourselves that are populated by others who share our commitment to work and learn together over an extended period of time, mostly in virtual space. These diverse communities expand our understanding of both commonalities and differences. They are places where we test our ideas and challenge ourselves and others to question, reflect, and grow.
3. **Need to build a personal learning network (PLN).** A PLN is a resource for do-it-yourself learning, a revolving and evolving virtual web of not only human experts but also objects and resources that are all accessed through the power of web-based networking tools and mobile technologies.
4. **Visionary and Dynamic - Teachers** need to be visionary. We are not marching slowly into the future; we are speeding toward it in a whirlwind frenzy, mandated by the exponential rate of change. As educators, we must continuously ask ourselves, What do students need to learn to succeed in the world to come? A world we can't even imagine.

5. Conducive Learning Environment:
Futuristic Schools are child-focused, aesthetically designed and adaptive with a view to promote learning, support collaboration and provide a personalised and stimulating environment to all. The school design extensively integrates progressive technology in teaching, such as virtual classrooms, wireless equipment, interactive technologies and mobile devices, in addition to the internet and high-quality digital learning resources.

2.3.4 Skill development curriculum
Skills and knowledge are the driving forces of economic growth and social development for any country. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of world of work. With the realization that school education is increasingly becoming academic-oriented, the government has decided to revive skill development programmes in schools to ensure 'all-round development' of students.
 In order to ensure overall development of a child, adequate training should be given for various skill sets. These can include physical training, handicrafts, painting, soap and candle manufacturing, cookery and many more. Since skill development programmes have more or less vanished from our schools. By bringing back skill training in schools, a

strong foundation can be built for students which can later be put to use for entrepreneurship and also in their everyday life.

2.3.4**.1 Meaning of skill development programme**

Skill development efforts today cover everything from personality development, 40-hour long "outreach and awareness programmes" conducted for farmers by the Ministry of Agriculture, 3-6 month courses encouraged by the NSDC and the National Skill Development Agency (NSDA), as well as two-year programmes in Industrial Training Institutes (ITIs).

2.3.4.2 **Need and Importance of skill development programmes**

1. Skill development is one of the essential ingredients for India's future economic growth as the country transforms into a diversified and internationally-competitive economy. Skill development is going to be the defining element in India's growth story.

2. Firstly, we need to re-define the relationship of education, employment and skill development. Secondly, as a very large population, India would never be able to up skill all of its youth across the country through the conventional education framework.

3. There is need of teaching the teachers and familiarising them with technology and how well it is used to help students learn at their pace is must. If quality of education was to change in India, then the systems need to a change. School life is critical for students and skill development must be an integral part of the curriculum adding it was unfortunate that even after attending school and college, students are not skilled. The changes are must as India will have 2/3rds of its population in the working age by 2020.

4. In "Teach to Transform Summit", organised by TalentSprint in association with *The Hindu* at the Indian School of Business (ISB) here, Dr. Rangarajan said how well the teachers adopt changes is also an important factor. In this context, he said Earlier, Santanu Paul, CEO and MD of TalentSprint said teachers must respect students if they are to be respected. The new age India needs teacher leaders but unfortunately there is no focus on it. TalentSprint effort is to create leaders among teachers by infusing the necessary skills. Sameer Sampat, CEO of Indian School Leadership Institute said there is a lack of leadership training in Indian schools. Learning atmosphere can be made more impactful with some little changes that were not in focus so far, he said.

5. There is need to develop multi-media enabled technology solutions for skilling by integrating online/in-class skills education through digital/video using blended learning, industry driven curricula and pedagogy and direct industry partnerships. These job-oriented eLearning courses can reach thousands of students simultaneously through the cloud platform.

6. While the government itself is a large employer, the primary focus of skill development is essentially towards private sector employment and entrepreneurship. So far, private sector itself has not geared up for the challenge. The World Bank Enterprise Surveys 2014 reveal that the percentage of firms offering formal training programmes for its permanent, full-time employees in India is just 35.9, compared to China's 79.2.

7. Technology can play a supplementary role in teaching while direct interaction between students and teachers will continue to remain relevant, but teachers should understand the potentiality of technology in their endeavour to mould the students.

8. The government has its task cut out. What is needed is a willingness to act, and to take the difficult decisions that can help realise the 'Skill India' dream.

2.3.4.3 Scope of skill development programme in India

▪ Government alone cannot accomplish this task. It calls for a concerted effort of government, private players and NGOs to address the issue in a comprehensive manner. If India is to gain its rightful place in the world, reap equal benefits and opportunities for all and rise from the debris of poverty and several other pressing issues, skills development will require to be given a place right on top of national priorities.

2. To help address the enormous gap that exists between skills needed by the Indian industry and what academia is producing, and the resultant deep fracture in the talent supply chain, Wadhwani Foundation set up the Skills Development Network (SDN) in 2011 facilitating multiple high school, college and employer initiatives for entry level mid-skill jobs.

3. With a proven model, the SDN platform is expected to train over two lakh individuals in 2015-16 alone and by 2020 it aims to develop capabilities to train three million students a year through program management of 50,000 schools and 10,000 colleges.

4. In the Union Budget 2012-13 , the government has doubled its allocation of funds for skills development under the National Skill Development Fund (NSDF) to Rs 1,000 crore, raising the corpus of the fund to Rs.2,500 crore.

9. The launch of the credit guarantee fund and exempting vocational training institutions from service tax are steps taken to help make skills training affordable. Now skilling going to the school level gives ample opportunity to the youth to attain skills of their choice.

10. There are a number of skill development centres, ITI's , polytechnics and ITCs. Apart from the government owned and operated skill centres, there are a few

good private sector skill centres also available, even the private sector skill centres are also being funded by the government in some or the other way.

11. The student has to be cautious on a few points before taking a decision to go for skill training: the first and foremost is the placement track record of a particular skill centre as majority of the skill centres do not have a dedicated placement cells. Secondly, the track record of the training centre as due to major push by the government and easy availability of funds and grants there has been a sudden popping up of skill centres happening. There is need of more and more such training centres, their quality needs to be constantly monitored by an agency. Third, what kind of certificate will be awarded by the skill centre. The important certifying bodies currently are NCVT and Sector Skills Ccouncil of NSDC.

12. We all are aware through various reports and research about the ageing population of the globe. India is uniquely positioned to fill the gap of the industry demand globally with its youth power. What mechanical revolution did to the European economy in the 50s and oil revolution did to Middle East economy in the 70s, the skilled manpower revolution can do the same to the Indian economy , if we are able to gauge and see the exact requirement of the industry globally and are able to train and certify our students to a level which is accepted by global standards.

2.3.5 National Skill Development Corporation

The National Skill Development Corporation India (NSDC) was setup as a one of its kind, Public Private Partnership Company with the primary mandate of catalysing the skills landscape in India. NSDC is a unique model created with a well thought through underlying philosophy based on the following pillars:

- **1. Create:** Proactively catalyse creation of large, quality vocational training institutions.
- **2. Fund:** Reduce risk by providing patient capital. Including grants and equity.
- **3. Enable:** the creation and sustainability of support systems required for skill development. This includes the Industry led Sector Skill Councils.

The main objectives of the NSDC are to:

- Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance
- Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector
- Play the role of a "market-maker" by bringing financing, particularly in sectors where market mechanisms are ineffective or missing
- Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact.

2.3.5.1Partnerships

NSDC operates through partnerships with multiple stakeholders in catalysing and evolving the skilling ecosystem.

- **Private Sector** – Areas of partnerships include awareness building, capacity creation, loan financing, creation and operations of Sector Skill Councils, assessment leading to certification, employment generation, Corporate Social Responsibility, World Skills competitions and participation in Special Initiatives like Udaan focused on J&K.
- **International Engagement** – Investments, technical assistance, transnational standards, overseas jobs and other areas.
- **Central Ministries** – Participation in flagship programmes like Make in India, Swachh Bharat, Pradhan Mantri Jan Dhan Yojana, Smart City, Digital India and Namami Ganga, among many others.
- **State Governments** – Development of programs and schemes, alignment to NSQF and capacity building, operationalization of program, capacity building efforts among others.
- **University/School systems** – Vocationalisation of education through specific training programs, evolution of credit framework, entrepreneur development, etc.
- **Non-profit organizations** – Capacity building of marginalized and special groups, development of livelihood, self-employment and entrepreneurship programs.
- **Innovation** – Support to early-stage social entrepreneurs working on innovative business models to address gaps in the skilling ecosystem, including programs for persons with disability.

2.3.5.2Achievements

- Over 5.2 million students trained
- 235 private sector partnerships for training and capacity building, each to train at least 50,000 persons over a 10-year period.
- 38 Sector Skill Councils (SSC) approved in services, manufacturing, agriculture & allied services, and informal sectors. Sectors include 19 of 20 high priority sectors identified by the Government and 25 of the sectors under Make in India initiative.
- 1386 Qualification Packs with 6,744 unique National Occupational Standards (NOS). These have been validated by over 1000 companies.
- Vocational training introduced in 10 States, covering 2400+ schools, 2 Boards, benefitting over 2.5 lakh students. Curriculum based on National Occupational Standards (NOS) and SSC certification. NSDC is working with 21 universities, Community Colleges under UGC/AICTE for alignment of education and training to NSQF.
- Designated implementation agency for the largest voucher-based skill development program, Pradhan Mantri Kaushal Vikas Yojana.
- Skill Development Management System (SDMS) with 1400 training partners, 28179 training centres, 16479 trainers, 20 Job portals, 77 assessment agencies and 4983 empanelled assessors. Hosting infrastructure certified by ISO 20000/27000 supported by dedicated personnel.

2.3.6   Vocational education

Now our country is developing due to the development of science and technology. This has been possible because of the availability of material and human resources. Our country is too rich in these two resources. What is needed is their proper utilization. This requires expansion and development of vocational education. The need of the hour is to impart vocational education in order to acquire expertness in the field of "technical know-how".

2.3.6.1 Meaning of Vocational education

Vocational education is concerned with the training on vocation. It is related to productivity. Vocational education prepares individuals for jobs. It has adequate employment potentialities. It helps in broadening of horizon. It leads to dignity of labour. It is helpful in the maximum utilisation of the material resources of the country.

Vocational education is education within vocational schools that prepares people for a specific trade.   It   directly   develops   expertise   in   techniques   related to technology, skill and scientific technique to span all aspects of the trade

When vocational education is mixed with general education it is called vocationlisation of education. Vocationalisation of education is designed to introduce manual skills in general education. Vocationalisation of education means training in some vocations at the secondary, Higher Secondary level with general education.

According to the recommendation of the Secondary Education Commission (1952-53), **vocational education** is to improve the vocational efficiency of the students. Therefore, the Commission emphasised on increasing the productive & vocational efficiency of our students and it recommended for diversified courses in multipurpose schools.

The Indian Education Commission (1966) pointed out that vocationalisation can bring education into closer relationship with productivity. It also recommended to give a strong vocational bias to secondary education and to increase the emphasis on agricultural and technological education at university stage.

The National policy on Educating (1986) and its revised formulations gave stress on the introduction of systematic, well planned and rigorously implemented programmes of vocational education.

Vocational education courses are offered in schools at Grades 11 and 12 (in most states with vocational streams, vocational and general courses are offered by the same institution). These are aimed at preparing students for entry into the labor market. There are 6800 schools, almost all in the public sector, enrolling close to 400,000 students in the vocational education scheme – utilizing just 40 percent of the available student capacity in these institutions. These schools offer a total of over 100 courses in various areas - agriculture, business and commerce, humanities, engineering and technology, home science and health and para medical skills.

2.3.7 Vocational Bias
Meaning of vocational Bias

Vocational bias means difference between men and women in terms of access to technical and vocational education and training. Even when they do, their choice of disciplines is vastly different from that of men. While men may go for mechanical, welding, printing, automotive, electronics, computers and so on, women go for training in culinary, housekeeping, front office, food and beverage and similar occupations. This comes about from a complex web of social, cultural and economic factors. There are well-entrenched cultural expectations of the roles women ought to play and sex-stereotyping of occupations that lead to such differences. But it is by breaking through such barriers can we ensure equal opportunities to women in the labor market. Women are often concentrated in unskilled and semi-skilled and low-paying occupations. In South Asia, as per ILO, 84% of women are in vulnerable employment.

1. Evidence on average appears to indicate that boys perform better than girls in maths while girls perform better in reading.
2. There is need to help girls and parents overcome cultural and social barriers that contribute to gender stereotyping in occupations. This requires interventions to adjust curricula and teaching materials to portray women through powerful role models.
3. But there is more to female employment in male dominated occupations than just school education. There is need for increasing access to technical training for women in high growth and modern economy occupations.
4. A recent paper in the International Journal of Gender, Science and Technology points out women could be trapped in dead-end, low paying and low-skills jobs in what would be deemed an advanced occupation such as ICT. Similarly, even in low-end occupations such as construction work, women could use skills development to improve their position in the workplace.

2.3.7.1 Reasons of Vocational biasness

1. Gap / Imbalance between male and female education arose from a lot of cultural practices in society resulting from deeply fixed prejudices, attitudes, customs, behavioral decisions and procedure. And these combine to discriminate against women rights and access to educational opportunities.
2. Religious and cultural practices biased against women are long aged problems (Okojie, 1995) and Igbe (2007) stressed that the belief that women being God's creation is a weaker vessel and has shallow brain buttressed this point. The effect of religion can be seen more in the upper fringes of the states (Mid-west- Edo, Delta, Ondo and Kogi States) where the girls are usually kept in Purdah and are less enrolled in the formal school system.
3. Culturally, women are expected to marry early to bear children to whom they should devote their time. The traditional domestic role assigned to women, like attending to household chores, farm work, fetching water and collecting / cutting firewood have affected their enrollment in school.
4. Responsibilities to household chores have also influenced families in disallowing girls to attend distant schools. Girls are usually kept at home to attend to farm

activities of planting and harvesting of arable crops. Consequently, early marriages of girls are encouraged to serve as source of cheap labour in the farms.

5. Unfortunately, this has served as a depressing factor in the availability of girls for science education (Okebukola, 1994). Sex-stereotyped occupation of the male over the female is a culture which has reinforced the notion of women into believing that it is taboo to venture into an occupation that is preserve of the males.

6. This no doubt has affected marriages, as women that have ventured into such vocations find it difficult getting married. Gender differential treatment is extending to classroom lessons. While the boys are expected to do better in mathematics and science, the girls are expected to do better in home economics and certain art subject (Nnachi, 2008). These girls are brought up to believe that science is meant for boys and the teachers (most often males) do not encourage girls to work hard in science

2.3.8 Suggested Questions

Q.1. Define vocational education. Discuss vocational bias and give the reasons for vocational bias.

Q.2. Explain skill development curriculum & importance of skill development programmers.

2.3.9 Suggested Readings.

- Aurora, G.L. 1995. *Child Centred Education--For Learning Without Burden*. Gurgaon: Krishna Publishing Co.
- National Council of Educational Research and Training. 1988. *National Curriculum for Elementary and Secondary Education: A Framework*. New Delhi: NCERT.
- National Council of Educational Research and Training. 2000. *National Curriculum Framework for School Education*. New Delhi: NCERT.
- Saxena, K.P.C. (ed.). 1994. *Human Rights--Perspective and Challenges*. New Delhi: Lancer Books.
- Subramanian, S. 1999. Human Rights: International Challenges. National Curriculum.

Lesson No. 2.4	Written By: Dr. Manju Sood

Title- Curriculum for children with special needs:
Purpose and importance, Curriculum needs of gifted, visually challenged and slow learners

STRUCTURE

2.4.1 OBJECTIVES
The main objectives of this lesson are:-
1. Write the meaning of children with special needs.
2. Explain the concept of children with special needs.
3. Explain the purpose and importance of curriculum for children with special needs
4. Explain needs of gifted, visually challenged and slow learners

2.4.2 INTRODUCTION:-
Every individual differs from each other in variety of ways. This difference may be physical, intellectual, social, emotional, cultural etc. When it is applied to education, children certainly are different in their talents. The children, who have wide range of differences with the average, are termed as exceptional children. The term 'exceptional children' or 'children with special needs' refer to children whose needs are very different from those of majority of children in society. These children deviate from average children to the extent that they cannot receive classroom instruction in regular schools. This was the belief prevalent for several years. But every deviant child is not exceptional until the deviation is such as to impair his certain skills. Even with in a particular group of exceptional children, variations do exist. They differ in the degree of impairment. Hence, it is appropriate to define children with special needs as those who differ from the

average to such a degree in physical and psychological characteristics that the traditional school programme does not allow all around development and progress of their personality. Therefore they need special care, special education or special ancillary services to grow and develop according to their abilities. Special education is inevitable for such children to meet their special needs. Special education is something special- special curriculum, special materials, special training, special techniques, special equipments and special help or special facilities may be required for such children.

2.4.3 CONCEPT:-
Definition of curriculum:
    Curriculum is a course taught in school. It is a document that includes a design that others have developed and the teacher implements in the classroom.

    Patton and Hoover define it as planned and guided learning experiences under the direction of the school with intended learning outcome.
    According **to Armstrong(1990),** " it is master plan for selecting content and organizing learning experiences for the purpose of changing and developing learners' behaviours and insights."

2.4.4 PURPOSE AND IMPORTANCE:-
The primary concern of curriculum development for children with special children is"functionality" in meeting the need of the individual student. It means the degree to which the curriculum prepares student for the environment in which they will live, work and learns. It also ascertains that careful attention is given to how a student's special needs can be met within the context of the general education curriculum. Modification of curriculum for these students is a must keeping the specific learning problems in the forefront arising out of a particular handicap. For example, limitation of the blind child for science practical and limitation of the deaf child to study more than one language need to be adjusted in the courses of study. These children should not miss the curriculum component that they can do. The NCERT had taken the responsibility of preparing the curriculum and supply the curriculum guides and teachers' handbooks for teaching children with special needs.Special children include gifted children, visually impaired children, slow learners and handicapped children also. In this chapter, we will discuss curriculum needs of gifted children, visually impaired children and slow learners based on their special characteristics.

SHORT IN-TEXT QUESTIONS
1. Who are special children ?
2. Define the term "curriculum"?
3. Why curriculum needs of special children are different from normal children?

2.4.5.A.Curriculum needs of gifted children

2.4.5.A.1.   Meaning of Gifted Children:-Gifted children are also a type of special children whose curriculum needs are different from normal children. They need an appropriately differentiated curriculum designed to address their individual characteristics, needs, abilities, and interests. It is difficult to generalize about students who are gifted because their characteristics and needs are so personal and unique. However, as a group they comprehend complex ideas quickly, learn more rapidly and in greater depth than their age peers, and may exhibit interests that differ from those of their peers. They need time for in-depth exploration, they manipulate ideas and draw generalizations about seemingly unconnected concepts, and they ask provocative questions."

Students who are gifted and talented are found in full-time self-contained classrooms, magnet schools, pull-out programs, resource rooms, regular classrooms, and every combination of these settings. No matter where they obtain their education, they need an appropriately differentiated curriculum designed to address their individual characteristics, needs, abilities, and interests.

2.4.5.A.2.   Identification of gifted children:-

These children can be identified as they learn rapidly and easily, use a lot of common sense and practical knowledge thinks clearly and recognize complex relationships and comprehends meaning, good memory and needs less effort for rote drill, better general knowledge, and good in language, performs difficult mental tasks and have more curiosity. In addition to these observations, a teacher can use psychological tests, parent's and peers reports; and self-analysis to identify a gifted child.

2.4.5.A.3.   Characteristics of gifted children:-
The various characteristics of gifted children can be explained under the following headings:-
  1. **Intellectual characteristics**:- These include better abilities to organize, analysis, memorize, synthesize and reason out things. They have quick and clear expression, good abstract thinking, rich vocabulary, high intelligence quotient, common sense and general knowledge.
  2. **Physical characteristics**:- Gifted children are good in weight, eye-sight, speech, physique and growth, taller, stronger, more energetic and healthier.
  3. **Educational and occupational characteristics**:- Gifted children are more advasnced in reading, superior to their classmates in educationsl activities and enter occupations demanding greater than average intellectual ability, creativity and motivation work.

4. **Social characteristics**:- Gifted children have good social adjustment, social leadership and tend to be happy. They have good sense of homour, initiate action, trustworthy, sincere and get along with others.
5. **Moral and ethical characteristics**;- They are emotionally stable, display emotional maturity and minimum conflicts with others, self-sufficient and less prone to psychic disorders.
6. **Personality characteristics**:- Gifted children are persistent, confident, curious, have happy disposition and flexibility to adapt themselves, read extensively and intensively, curious and have varied interests.

2.4.5.A.4.   Developing An Effective Curriculum for gifted children:-

An effective curriculum for students who are gifted is essentially a basic curriculum that has been modified to meet their needs. The unique characteristics of the gifted as a group are that they comprehend complex ideas quickly, learn more rapidly and in greater depth than their age peers, and may exhibit interests that differ from those of their peers. They need time for in-depth exploration, they manipulate ideas and draw generalizations about seemingly unconnected concepts, and they ask provocative questions.

A program that builds on these characteristics may be viewed as qualitatively (rather than quantitatively) different from the basic curriculum; it results from appropriate modification of (a) content; (b) process; (c) environment; and (d) product (Maker, 1982).

(a)   Modification of Content

Content, as well as learning experiences, can be modified through acceleration, compacting, variety, reorganization, flexible pacing, and the use of more advanced or complex concepts, abstractions, and materials.

(1) When possible, students should be encouraged to move through content areas at their own pace.
(2) Their learning characteristics are best served by thematic, broad-based, and integrative content, rather than just single-subject areas.
(3) Concept-based instruction should be provided to the so as to expand opportunities to generalize and to integrate and apply ideas.
(4) Providing an interdisciplinary approach is another way of modifying curriculum.
(5) Curriculum experiences that cross or go beyond traditional content areas, particularly when they are encouraged to acquire an integrated understanding of knowledge and the structure of the disciplines.

(b)   Modification of Process

To modify process, activities must be restructured to be more intellectually demanding.

(1) Students need to be challenged by questions that require a higher level of response or by open-ended questions that stimulate inquiry, active exploration, and discovery.
(2) Encourage students to think about subjects in more abstract and complex ways.

(3) Activity selection should be based on student interests, and activities should be used in ways that encourage self-directed learning.
(4) Every teacher should know a variety of ways to stimulate and encourage higher level thinking skills.
(5) Group interaction and simulations, flexible pacing, and guided self-management are a few of the methods for managing class activities that support process modification.

(c)   Modification of Environment
Gifted students learn best in a receptive, nonjudgmental, student-centered environment that encourages inquiry and independence, includes a wide variety of materials, provides some physical movement, is generally complex, and connects the school experience with the greater world. The teacher should establish a climate that encourages the gifted children to question, exercise independence, and use their creativity in order to be all that they can be.

(d)   Modification of Product:
   (i) Expectation and Student Response
        Teachers can encourage students to demonstrate what they have learned in a wide variety of forms that reflect both knowledge and the ability to manipulate ideas. They should address real problems, concerns, and audiences; synthesize rather than summarize information; and include a self-evaluation process.
   ii)   Assessing Curriculum Effectiveness:-
        Curriculum development is a dynamic, ongoing process. Special attention needs to be paid to articulation, scope, and sequence to avoid gaps and repetition through grade levels

2.4.5.A.5   Conclusion
   To fulfill the curriculum needs of gifted students, the following points should be taken into consideration:-
   - The content of curricula for gifted students should focus on and be organized to include more elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge within and across systems of thought.
   - Curricula for gifted students should allow for the development and application of productive thinking skills to enable students to reconceptualize existing knowledge and/or generate new knowledge.
   - Curricula for gifted students should enable them to explore constantly changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world.
   - Curricula for gifted students should encourage exposure to, selection, and use of appropriate and specialized resources.

- Curricula for gifted students should promote self-initiated and self-directed learning and growth.
- Curricula for gifted students should provide for the development of self-understanding and the understanding of one's relationship to persons, societal institutions, nature, and culture.
- Evaluations of curricula for gifted students should be conducted in accordance with the previously stated principles, stressing higher level thinking skills, creativity, and excellence in performance and products.

2.4.5.A.6. Developing curriculum that is sufficiently rigorous, challenging, and coherent for students who are gifted will produce high levels of satisfaction, not only for the students who are beneficiaries, but also for every teacher who is willing to undertake the task.

2.4.5.A.6.   Short-In-Text questions:-
1. Define the term "Gifted Children"?
2. List any five characteristics of Gifted children.
3. Write any three ways of identifying Gifted Children.

2.4.5.B.   CURRICULAR NEEDS OF VISUALLY IMPAIRED CHILDREN

2.4.5.B.1.   Meaning:
Visually impaired children are those children who have low vision or residual vision. These persons see something in 20 feet distance, which can be seen by a normal eye at 200 feet easily in the better eye after corrections. Visually impaired children can be classified into two types:- Blind and partially seeing. Blind children are those visually handicapped children who use braille and partially seeing are those who use print.

2.4.5.B.2.   Causes of Visual impairment:-
Visual impairment can be due to congenital and development disorders; General diseases like syphilis, chronic diarrhea, hypertension, diabetes, kidney diseases and malnutrition and injuries.

2.4.5.B.3.   Identifications of visually impaired children:-
Blind children can be identified by their parents at the time of birth only. Visually impairment children can be identified at later stages by teachers and parents by observing signs like rubbing of eyes, watery eyes, reddened eyelids, holding books and other objects close to eyes. Some tests, e.g. WISC-R ,Koh's Block Design tests, visual efficiency scale, can help to identify these children.

2.4.5.B.4.   Characteristics of visually impaired children:
The characteristics of blind and partially sighted children are discussed below:-

i) **Characteristics of Partially sighted children:**

Partially sighted children has defects of vision like Myopia /shortsightedness, Hypermetropia/for sightedness, Astigmatism(inability to focus on vertical and horizontal lives at same time). Cataract, glaucoma(Abnormal high pressure within the eye ball), squints and nystagmus (disorder of eye movement): These do not differ significantly from normal children in educational achievement, social achievement and personality characteristics.

ii) **Charactersitics of Blind children**:

These are following:

1 Good language development yet different from the normal child's language.
2 Inferior in motor performance than normal and partially sighted children.
3 IQ slightly poor than normal children due to less exploration in environment.
4 Different cognitive abilities.
5 Difficulty in comprehending spice.
6 Perception in a successive manner.

2.4.5.B.5.   Curriculum needs of Visually Impaired Children

In addition to the existing core curriculum, which includesEnglish language, arts, other languages, to the extent possible, mathematics science, health physical education, fine arts, social studies, economics, business education and vocational education history, visually impaired children need the expansion in their existing core curriculum. Expansion of the curriculum should include compensatory or functional academic skills, including communication modes, orientation and mobility, social interaction skills, independent living skills, recreation and leisure skills, career education, use of assistive technology, sensory efficiency skills and self-determination.

Nine Unique Educational Needs for Students with Visual Impairments:-

Compensatory or Functional Academic Skills, Including Communication Modes

Mastery of compensatory skills will usually mean that the visually impaired student has access to learning in a manner equal to that of sighted peers. Functional skills refer to the skills that students with multiple disabilities learn that provide them with the opportunity to work, play, socialize, and take care of personal needs to the highest level possible. Communication needs will vary, depending on degree of functional vision, effects of additional disabilities, and the task to be done. Children may use braille, large print, print with the use of optical devices, regular print, tactile symbols, a calendar system, sign language, and/or recorded materials to communicate. Regardless, each student will need instruction from a teacher with professional preparation to instruct students with visual impairments in each of the compensatory and functional skills they need to master

Orientation and Mobility

As a part of the expanded core curriculum, orientation and mobility is a vital area of learning. Teachers who have been specifically prepared to teach orientation and mobility to blind and visually impaired learners are necessary in the delivery of this curriculum. Students will need to learn about themselves and the environment in which they move - from basic body image to independent travel in rural areas and busy cities.

Social Interaction Skills

Social interaction skills are not learned casually and incidentally by blind and visually impaired individuals as they are by sighted persons. Social skills must be carefully, consciously, and sequentially taught to blind and visually impaired students. It is so much fundamental need that it can often mean the difference between social isolation and a satisfying and fulfilling life as an adult.

Independent Living Skills

This area of the expansion in core curriculum is often referred to as "daily living skills." It consists of all the tasks and functions persons perform, in accordance with their abilities, in order to lead lives as independently as possible. These curricular needs are varied, as they include skills in personal hygiene, food preparation, money management, time monitoring, organization, etc. Teaching of independent living skills should be done continuously and not only through traditional classes in home economics and family life. The skills and knowledge that sighted students acquire by casually and incidentally observing and interacting with their environment are often difficult, if not impossible, for blind and visually impaired students to learn without direct, sequential instruction by knowledgeable persons.

Recreation and Leisure Skills

Many of the activities in physical education are excellent and appropriate for visually impaired students. In addition, however, these students need to develop activities in recreation and leisure that they can enjoy throughout their adult lives. The teaching of recreation and leisure skills to blind and visually impaired students must be planned and deliberately taught, and should focus on the development of life-long skills.

Career Education

There is a need for general vocational education, as offered in the traditional core curriculum, as well as the need for career education offered specifically for blind and visually impaired students. The disadvantage faced by the visually impaired learner is the lack of information about work and jobs that the sighted student acquires by observation. Career education in an expanded core curriculum will provide the visually impaired learner of all ages with the opportunity to learn first-hand the work done by the bank teller, the gardener, the social worker, the artist, etc. It will provide the student opportunities to explore strengths and interests in a systematic, well-planned manner.

Technology

        Technology is a tool to unlock learning and expand the horizons of students. It brings the gift of a library under the fingertips of the visually impaired person. Technology enhances communication and learning, as well as expands the world of blind and visually impaired persons in many significant ways. Thus, technology is a tool to master, and is essential as a part of the expanded core curriculum.

Sensory Efficiency Skills

        Sensory efficiency includes instruction in the use of residual vision, hearing, and the other senses; for example, learning how to use optical devices, hearing aids, augmentative communication devices, and the like. In addition, learning how to integrate all remaining senses to counter the impact of any missing or impaired sense is also integral to this area; for example, learning how to use tactual, gustatory, and olfactory input rather than visual cues to identify one's personal possessions, or using hearing and the other senses to identify people one knows without visual cues, fits into this area.

Self-Determination

        Students learn from successes and failures how to achieve one's goals in life. Self-determination is the ability for people to control their lives, reach goals they have set and take part fully in the world around them.

        The learning of the above mentioned curriculum will enable the visually impaired children to lead a life good enough.

2.4.5.B.6.   **Short-in-text questions:-**
1. Who are visually impaired children?
2. How will you identify a partially sighted child?
3. List any three curricular needs of visually impaired children.

2.4.5.C.   **SLOW LEARNERS**

2.4.5.C.1.   **Meaning:**

        "Slow learner" or Backward" term is used for those children who are unable to cope with in work normally expected of their age group. Jenson(1980) states that students with I.Q. 80 to 90 who are traditionally labelled "dull normal" are generally slower to " catch on" to whatever is being taught if it involves symbolic, abstract or conceptual subject matter.

2.4.5.C.2.   **Causes of Slow learning:**

     Slow learning may be due to various causes as given below:-
1   Poverty: poverty affects children's health, reduces their learning capacity as it deprives them of proper food and explosive to brain sharpening learning experiences.

2   Emotional factors:- The emotional problems of slow learners include withdrawing, immaturity , low in self-image, or depression which slows down their learning.

3   Intelligence of family members:Intelligence of parents and family members also influences the learning of the individual.

4   Personal factors:- Physical deformities , pathological body conditions, and defects in sight, hearing and speech are personal factors which may pave down the way for slow learning.

2.4.5.C.3.   Characteristics of slow learners:

The characteristics of slow learners which help in their identification include:

1   Limited cognitive capacity: slow learners fail to cope with learning situations, to reason abstractly, thick rationally, form concepts and to employ cognitive strategies.

2   Poor Memory:- Slow learners are unable to retain information in memory storage for a long time because of weakness in attention that may be due to unsuitability of the material.

3   Distraction and lack of concentration:-
Slow learners are unable to focus continuously, especially if material is presented in abstractions. It leads to distraction and lack of concentration.

4   Inability to express ideas:- It is to because slow learners have difficulty in finding and combining words, their emotional immaturity , poor vocabulary and lack of imagination and foresight.

5   Poor perceptional ability: Slow learners are poor at identifying organize and translate sensory data into meaningful information.

6   Poor in handwriting and motor work.

7   Poor in social qualities: slow learners generally not very social.

8   Emotionally unstable:-They generally suffer from frequent mood changes.

2.4.5.C.4.   Identifications Of Slow Learners:

A teacher needs to identify slow learners so as provide them with curriculum according to their needs.They can be identified on the basis of a three phase process:-

i)   Initial identifying phase:- At this phase, slow learners can be identified through observational technique, Educational assessment and case study technique.

ii)   Scientific confirmatory technique:- At this stage, slow learners can be identified through scholastic tests, personality tests, intelligence tests, psychometric and psychological tests and medical examination.

iii)   Counter check phase: At the third stage, after confirmation at stage-I and stage-II , the slow learners can be identified on the basis of rate of learning and by Sandra's checklist.

2.4.5.C.5.   Types Of Slow Learners

There are mainly two types of slow learners:

1-The Children Requiring Separation or Segregated Set-Up

These children are found to suffer from some or the other severe forms of; earning retardation and educational backwardness on account of their limited abilities like-retarded mental development coupled with some of other socio-psychological deficiencies. They require more attention and provisions for their schooling and education, more often in the shape of special schools or special classes.

2-The Children Served in Integrated General Set-Up

The nature and degree of the severity of learning retardation and academic backwardness in these children is less severe and thus, these handled properly in the integrated general set-up of our existing schools. Their backwardness is generally two types-general and specific. The child suffering from general backwardness is weak in all the subjects of the school curriculum. The child suffering from specific backwardness, on the other hand, lags behind in one or two specific subjects only, while in others his progress may be satisfied or even extraordinary.

2.4.5.C.6.   Characteristics of Slow Learners

Taking the aforesaid factors into consideration, characteristics of slow learners can be systematically listed out.

i)   Limited Cognitive Capacity:-Due to limited cognitive capacity, slow learners fail to cope with learning situations and to reason abstractly. Rational thinking becomes practically impossible for them.

ii)   Poor Memory :-slow learners have a poor memory power.

iii)   Distraction and Lack Of Concentration:-Attention span of the slow learners is relatively short. Also, they lack concentration. They need short and frequent lessons for better perceptions.

iv)   Inability to Express Ideas:-Slow learners are poor at remembering messages and listening to instructions. As a result, they are unable to express ideas with clarity.

2.4.5.C.7.   Curriculum Needs For Slow Learners

A clear perception of the curriculum needs of slow learners will enable the teacher to combat slow learning in an effective manner. The following are the curriculum needs of slow learners:-

1-**Motivation:**Slow learners usually evince an attitude of avoidance resulting from previous experience of failure or dislike of a subject. They often glance at words rather

than scrutinize them carefully, with the result that their errors in recall are the result of guessing from slight clues such as initial letters or superficial similarities. When the teacher succeeds in motivating the students, his instructions will be effective and the educational objectives can be achieved. Moreover, motivation not only instigates the behaviour of slow learner but also reinforces the ongoing behaviour. Motivation makes the slow learners desirous of learning to apply him to the task.

2-**Individual Attention**: The individual differences of the children should be properly recognised and the individuality of the child must be respected. The teacher should take positive effort to ascertain the specific disability of the slow learners and accordingly he should devise his remedial instructional strategy which should cater to the needs of each slow learner. If this remedial measure is enforced, better individual attention can be given to the slow learners in the special classes which will ultimately, promote better human resource development.

3-**Restoration And Development of Self-Confidence**: Constant lack of academic success, rejection by other children, faulty instruction and mismanagement by parents lead to emotional disturbance, feelings of inadequacy and personality and conduct disorders in the slow learners. Therefore, the teacher should take all possible effort and make use of all possible opportunities to restore and develop self-confidence in slow learners which will ultimately lead them into manifesting better attainment.

4-**Elastic Curriculum**:The knowledge centered curriculum focuses on the content of subject areas, whereas the needs centered curriculum assumes that human needs serve as the foundation for curriculum. The teachers should not lay much stress on abstract and theoretical study because the slow learners cannot understand the abstract concepts very easily. Whenever there are abstract concepts the teacher should try to establish possible relationship or point out possible associations so that the slow learners can have a grasp of the abstract concepts.

5-**Remedial Instruction**: With a view to ensure optimum human resource development special remedial classes should be arranged for slow learners.

8-**Healthy Environment :**The school environment should be healthy and reasonably free for slow learners. Poor environmental factors should be adequately tackled or removed at the earliest so that congenial atmosphere can created for the effective learning of slow learners

7-**Periodical Medical Check-Up**: Physical anomalies sometimes serve as vital contributory factors for slow learning.If a particular anomaly is detected and correctly diagnosed, then a slow learner can become a normal learner after remedial treatment.

8-**Special Methods of Teaching:** The research evidences reveal that the following special methods will be very effective for slow learners:-

      a-Audio and visual instructions

      b-Mastery learning strategy with extra corrective instruction

      c-Modular instruction

      d-Computer assisted instruction

9-**Learning Contracts and Peer Tutoring:**

A)LearningContracts:A learning contact is an agreement between the teacher and the student to study and share information about a specific topic. It helps the classroom teacher organize the instructional programme for some exceptional students.The learning contract indicate how the student's performance will be evaluated and, if appropriate, what the schedule will be for completing the project.

B)Peer Tutoring: When one student teaches another, this is called peer tutoring. Teacher monitoring of the tutors is an integral part of the system.

2.4.5.C.8.   **Conclusion:** Neglecting or overlooking slow children may pose a serious problem for their progress and welfare besides proving a nuisance to the society. For taking measures, for their treatment and education, beginning should be made through regular medical check-up and necessary treatment and redressing their maladjustment problems at home and school. As far as possible, they should be taught along with their other non-disabled peers. However, in the most severe cases of retardation or backwardness, we can opt special schools as the placement option. The remedial steps and treatment measures for the backward children should therefore be mostly arranged in the schools by adopting the measures like.

      1-Provision of special curriculum, methods of teaching and special teachers.

      2-Special coaching and proper individual attention.

      3-Checking truancy and non-attendance.

      4-Provision of co-curricular activities, rich experiences and diversified causes.

      5-maintenance of progress record.

      6-Rendering guidance services.

      7-Controlling negative environmental factors and

      8-taking the help of experienced educational psychologist

2.4.5.C.9.   **Short-in-text questions**:-
1. Explain the term " Slow learners".
2. What are three identification charateristics of the slow learners?
3. Write any five ways of fulfilling curricular needs of slow learners.

2.4.6   **Summary:-**The discussion in this lesson has elaborated on the concept of special children and purpose and importance of their curricular needs. This lesson of

curricular needs of special children also includes curricular needs of various types of slow learners such as gifted children, visually impaired children (including partially sighted and blind children) and slow learners.

2.4.7   Key concepts:-

i)**Mastery Learning Strategy**:-Mastery learning is a system of instruction that emphasises the achievement of instructional objectives by all students by allowing learning time to vary.

ii) **Modular Instruction**:- Instruction through modules. Module is a self contained auto instructional package dealing with a single conceptual unit or subject matter.

iii)**Computer Assisted Instruction**:-Computer assisted instruction is a kind of individualised instruction administered by a computer.

iv) **Curricular needs**:- Needs to be fulfilled through curriculum

2.4.8   Suggested Questions:-

1. What do you understand by the curricular needs of special children? Why these should be considered important while providing education to special children?
2. Whom will you consider a "Gifted Child"? How will you fulfill curricular needs of such children?
3. What are two types of visually impaired children? What are their various curricular needs?
4. Who are slow learners? What different programmes will you adopt to fulfill their educational needs?

2.4.9   Suggested reading and web resources:-

1. Sekhon, S.S &Sekhon, M.K.(2007). "Education of Exceptional Children (Children with Special needs)"Kalyani Publishers. Delhi.
2. http://www.zenithresearch.org.in/images/stories/pdf/2011/Dec/zijmr/22_VOL%201_ISSUE8_ZEN.pdf
3. http://www.afb.org/info/programs-and-services/professional development/teachers/   expanded   -core-curriculum/the-expanded-core-curriculum/12345
4. http://www.ascd.org/ASCD/pdf/journals/ed_lead/el_198903_tassel-baska.pdf
5. http://www.davidsongifted.org/db/Articles_id_10342.aspx

2.4.10 Self- Check Exercise:-Fill in the blanks:
1. Gifted children need an appropriately differentiated_____ designed to addressed their individual characteristics, needs, abilities and interests.
2. The curriculaum of visually impaired children should include teaching of _____,_____and _____ skills.
3. Two types of slow learners are _____and _____.
4. Special methods for teaching slow learners are _____,_____and _____.