UNIT - I

(A) HOME SCIENCE AS A DYNAMIC BODY OF KNOWLEDGE

Home Science is a mission-oriented field with goals of enabling families to be more self-sufficient, developing the full potential of all human beings and enhancing the quality of life for individuals and families. Because of this mission-oriented approach, much of the practice practical problems of daily life.

Definitions of Home Science

(1) According to Fri.Lemy Voelimy- a leader in the international federation of home Economics defined “Home Economics is the art and science of relating families to progress". Its means

(I) that home Economists are concerned with families (people)

(II) That Home economists combine the scientific and human approach to help individuals cope with change and use technology to enrich their lives.

(2) Rajamal P. Devdas: Defined Home Science as education for home life. The home and family reflect the progress of the country. Good citizenship, mutual respect, contentment, health, co-operation, a whole some personality and efficiency in work all are derived from happy homes.

NATURE AND ITS APPLICATION TO THE NEEDS OF THE SOCIETY.

(1) Food , nutrition and cookery: Food refers to anything solid or liquid which on being swallowed is digested and assimilated in the body and keeps it well. Nutrition is the science of foods. It can be defined as 'Food at work in the

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body'. In it we study various processes where by the organism ingests, digests, absorbs, transports and utilizes nutrients and disposes of their and products. Cookery is something more then a science. It is an art. It deal with the preparation of various types of food. It requires a good deal of practice so as to achieve a high quality of product with proper use of time, money and material.

(2) Household Management: In it we deal with the administrative aspect of family living. By its study pupils develops an appreciation of management in the economical use of money, time and energy. In its simplest term we can defined household management as "using what you have to get what you want". Household Management deals with all the aspects of human life i.e. time, energy, skills, money, equipment, car, jewellery etc. It is expected that a student of home science requires a basic knowledge of the following:

(*) The process of management

(*) Household arithmetic

(*) Family resources, Budget and financial management

(*) Work simplification techniques

(*) Family consumption and marketing and

(*) Safety and sanitation hygiene including ventilation and lighting.

(3) Textiles, Clothing and Laundry: Clothing not only protect us from the vagaries of nature but they are also an asset to our personality. A proper knowledge of textile, clothing and laundry develops aesthetic hygienic and economic values. Such is knowledge is quite useful for house wives as such a knowledge will give the pupils a knowledge of.

(*) Appropriate clothing for different individuals on the basis of Individuals taste and on the basis of seasons.

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(*) Laundering and storage of clothing.

(*) Preparing the clothes.

(*) Operation of serving machine, tailoring, needle work, embriodery etc.

(*) Washing and cleaning of clothes.

(*) Use and care of fabrics and

(*) Designing of garments appropriate for different occasions.

(4) Child Development and Mother Craft: The knowledge of child development and mother craft is quite useful to would be mothers. This knowledge comes in handy to them, when they become mothers and they plan activities and experience for them selves. This knowledge helps the lady teacher working in nursery schools in selection of good storing for teaching. Pupil learn about-

(*) Physical function of human body

(*) Family relationship.

(*) Care of the child including pre-natal care.

(*) Hygienic principles for the control of diseases and for a healthy life.

(*) Growth and development through lifecycle.

(*) Psychological and educational nature of the child and

(*) Welfare of children in home, school, community and nation.

(5) Human Relationships: It has already been emphasized that family is the basis social unit. In a family the human relationship begins by the process of interaction between its members and housewife is the chief architect in the

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foundation of this social relationship. To perform this role it is essential for her to knew, how to adjust to the family and to the community to which her family belongs? If she is trained in this art she can act as a link between the family and the community. It is with these aims in view that the pupils are taught in home Science classes about individual and group relations, leisure time activities, civic and social responsibilities, spiritual and moral values etc.

(6) Health, First aid and Home Nursing: There is a saying "Healthy mind in a healthy body". It emphasizes the importance of good health and good health is the key to happiness. In home science the pupils are taught the principles and practices of mental health and physical health and to improve their health habits. This knowledge helps them in maintance of good health for happiness, control of diseases, care of sick, personal grooming, first aid measures etc. It is also desirable for a successful happy family life to teach young girls topics like tolerance, honesty, loyalties and ethical standards.

UNIQUENESS OF HOME SCIENCE

(1) Vocational Value: The knowledge of Home Science provides an opening do many professions. It also formd the basis of many a courses of study which are purely vocational in nature, such as bietetics, nursing, teachership etc.

It has helped to solve the problem of leisure as the study of home science forms the leasis of many useful hobbies and other productive activities in the later life of the students.

(2) Foundation of Good Citizenship: Some of the requisites far a person to be a good citizen are as under:

Pre-planning, adjusting to the environment, proper use of available material and resources, importance of realizing human relationship, sensitive to cleanliness and learning by doing etc.

The study of home science helps to inculcate these values to the pupils.

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(3) Universality: Home is basic social institutions that have existed since times immemorial. It is primary social group that is characterized by a common residence, cooperation and reproduction. In spite of great scientific and technological advancement, the most modern and civilized society of the day, has not been able to give a complete and fully satisfying substitutes far home . So can say that the origin and development of Home us of universal nature.

(4) Self-reliance: While going through the course of Home science a student has to rely on himself/herself. Her own judgment, reasoning and initiative alone is of use to her at every step. It thus develops self-reliance in her.

(5) Solution of Household problems: we know that the two basic factors that have in influence on personality development of a child are heredity and environment. By environment we mean home, parent, family, friends, surroundings, food, education, relation etc. Though the effect and interplay of various environmental factors are a complex process and so we can not easily say which one of the various factors of environment play a more decisive role in shaping the character of an individual. Thus the study of Home science helps in solving many a domestic problems.

(6) Preparation for the change to come: In the olden days girls learnt household work by example and practice and there where no special arrangement in the form of formal courses in home making.

In the present time Home Science occupied on importance place in the educational curricula of all grades from nursery school to the university level.

(B) AIMS OF TEACHING OF HOME SCIENCE AT SECONDARY LEVEL.

The major aims of teaching of home science at this stage of education can be summarized as followed:

(1) To develop a sense of awareness for the art of daily living.

(2) To provide opportunities for creative expression.

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(3) To develop good work habits.

(4) To develop individual imitative and self confidence.

(5) To provide practical experience in various field of life.

(6) To develop a feeling of belongingness to community and to nation.

(7) To develop international understanding.

(8) To prepare the girls for their future life.

(9) To develop in the pupil the proper scientific attitude.

(10) To enable pupil to create on environment and outlook to live richer and purposeful lives.

Enumerating the goals of secundary education. The Mudaliar Commission suggests as follow:

(1) Developing democratic citizenship.

(2) Increasing the reproductive or technical and Vocation efficiency.

(3) Developing the personality.

(4) Developing the leadership.

The Kothari Commission said," Education should be developed so as to increase productivity achieve social and national integration, accelerate the process of modernization and cultivate social, moral and spiritual values.

The goal of Home science is the same as that of general education.

(1) Individual security.

(2) Health and well being and

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(3) Social and emotional integration.

The Knowledge of Home Science can be effectively employed by the pupils.

(1) To solve various problems in his daily life.

(2) To build happy homes of future

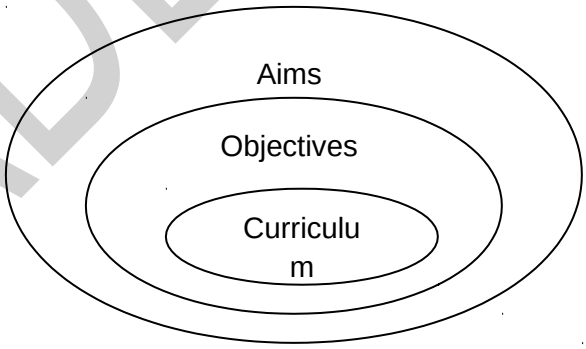
(3) To prepare careers outside the home.

UNIT-2

AIMS AND OBJECTIVES OF TEACHING OF HOME SCIENCE

Introduction

There is no education system without aims because aims provide guidelines. A teacher without aims will be like a sailor who does not know his destination. Aims are conscious purposes which should be kept in mind, while doing any activity. The aims values when they are achieved. Values are end product of aims. Aims are general and objectives are particular. Aims are broader and comprehensive and objectives are a part of aims. Syllabus or curriculum is framed keeping in view the objectives. It can be clearly understood with the help of following diagram.



Definition of Aims and Objectives

According to John Dewey: "An aim is a foreseen end that gives direction to an activity or Motivates behaviour."

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According to NCERT's view: "An objective is a point or an end view of something towards which action is a direct plan for change sought through any activity what we set out to do."

According to C.V. Good's view: "Objective is a standard or goal to be achieved by the pupil when the work in the school activity is completed or it is a desired change in the behaviour of a pupil, a result of experience directed by the schools." **View of Adam Wesley**

- To give knowledge about government: It aim at making student capable of understanding the needs and requirements of the govt. structure.
- To given knowledge about political parties: It should aim at acquainting students with the activities and formation of the political parties.
- To give knowledge about Human welfare: aim at strengthening the feeling of human-welfare, world peace public good, etc. in the students.
- To give knowledge about Democrative traits: Spirit of co-operation, sympathy, love etc. should be develop din one students. These qualities will enable them to discharge their obligations, as citizens, successfully.

Difference between aims & objectives

Aims	**Objectives**
Aims are what you want to achieve.	Objectives are what you will do to achieve them.
Aims would be overall thing you want to eventually achieve. For e.g. My aim is to become a millionaire	Objectives are specific tasks. For e.g. My objective is to sell this stock.
Not clear	Clear
Non-strategical	Strategical
Difficult to achieve	Easy to achieve

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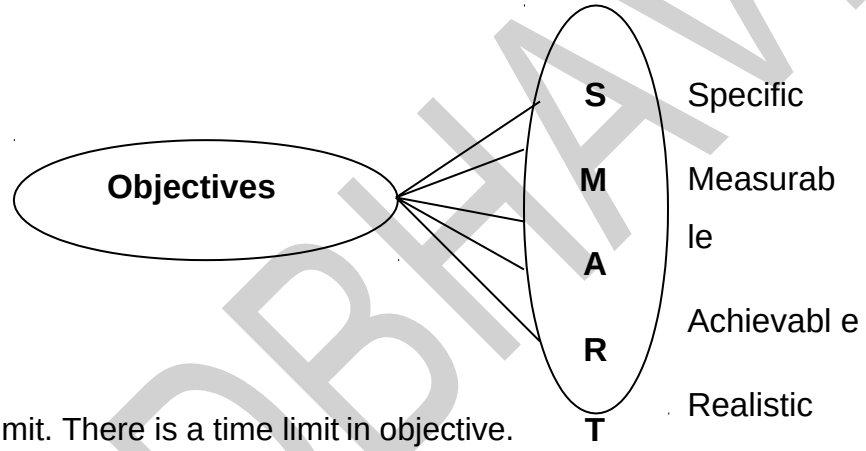
Comprehensive	Not comprehensive
It’s like a statement	It’s specific

OBJECTIVES

1) To provide knowledge about aims and objectives of political science
2) To give knowledge about govt.
3) To give knowledge about democracy.
4) To give citizenship education.



No time limit. There is a time limit in objective.

Bloom’s Taxonomy of objectives

One of the most widely used ways of organizing levels of expertise is according to Bloom's Taxonomy of Educational Objectives. Bloom's Taxonomy uses a multi-tiered scale to express the level of expertise required to achieve each measurable student outcome. Organizing measurable student outcomes in this way will allow us to select appropriate classroom assessment techniques for the course.

One of the most important aspects of teaching learning process is the specification of instructional objectives. The over increasing aspects of various courses, services and activities in the secondary school make more emphasis on instructional objectives.

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Bloom and his associates in the university of Chicago, have produced a most important classification or taxonomy of cognitive objects, affective objectives and psychomotor objectives. In the cognitive domain, the teacher is interested in what will the students do in the affective domain the teacher is interested additionally with what he goes to it or with it and conative domain concerns with how does he do it.

The cognitive Domain

It comprises the acquisition and manipulation of factual information. It is also concerned with intellectual skills and abilities of the students. There are several levels within cognitive domain that are very important for formation of instructional objectives in classroom teaching.

B.S. Bloom has divided the cognitive objectives into six categories as follows:

- **Knowledge:** This is the first and lowest level of cognitive aspect. In this aspect the students are expected to recall information asked in the provided questions. They have to recognize information.
- **Comprehension:** This category also indicates the lowest level of understanding. It means the basic understanding of the facts, ideas, methods, processes and principles etc. It includes the three types of activities.
- **Application:** The facts, principles, ideas, theories must be applied.
- **Analysis:** It includes divisions of contents into its elements and these are mutually related. It is of medium level.

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- **Synthesis:** In this category all the elements are organized in such a way that they can form a unique whole. The elements are arranged and combined in such a way to form a pattern of structure not clearly observed before.
- **Evaluation:** It is the highest level of objectives of cognitive domain. It includes quantitative and qualitative judgment about the extent to which material and method satisfy criteria.

Table 1: Bloom's Taxonomy of Educational Objectives for Knowledge-Based Goals

Level of Expertise	Description of Level	Example of Measurable Student Outcome
1. Knowledge	Recall, or recognition of terms, ideas, procedure, theories, etc.	When is the first day of Spring?
2. Comprehension	Translate, interpret, extrapolate, but not see full implications or transfer to other situations, closer to literal translation.	What does the summer solstice represent?
	Apply abstractions, general principles, or methods to specific concrete situations.	What would Earth's seasons be like if its orbit was perfectly circular?
4. Analysis	Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. Includes realizing the distinction between hypothesis and fact as well as between relevant and extraneous variables.	Why are seasons reversed in the southern hemisphere?
5. Synthesis	Creative, mental construction of ideas and concepts from multiple sources to form	If the longest day of the year is in June,

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- **Synthesis:** In this category all the elements are organized in such a way that they can form a unique whole. The elements are arranged and combined in such a way to form a pattern of structure not clearly observed before.
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Table 1: Bloom's Taxonomy of Educational Objectives for Knowledge-Based Goals

Level of Expertise	Description of Level	Example of Measurable Student Outcome
	complex ideas into a new, integrated, and meaningful pattern subject to given constraints.	why is the northern hemisphere hottest in August?

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Affective Domain:

Emotions, attitude, interests, feelings, values and morals exist and affect all human behavior. It is the school where various values and feelings of students are developed and shaped through engaging them in the several activities in the rich social environment of the school. It is the duty of the teacher to develop maximum affective domain of the pupils by effective objectives

1. Receiving

This refers to the learner's sensitivity to the existence of stimuli – awareness, willingness to receive, or selected attention.

2. Responding

This refers to the learners' active attention to stimuli and his/her motivation to learn – acquiescence, willing responses, or feelings of satisfaction.

3. Valuing

This refers to the learner's beliefs and attitudes of worth – acceptance, preference, or commitment. An acceptance, preference, or commitment to a value.

4. Organization

This refers to the learner's internalization of values and beliefs involving (1) the conceptualization of values; and (2) the organization of a value system. As values or beliefs become internalized, the leaner organizes them according to priority.

5. **Characterization** – the Internalization of values

This refers to the learner's highest of internalization and relates to behavior that reflects (1) a generalized set of values; and (2) a characterization or a philosophy about life. At this level the learner is capable of practicing and acting on their values or beliefs.

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Psychomotor Domain:

It is very important in taxonomy of educational objectives because motion is necessary condition of survival and of independence. Our lives require more physical strength. Intelligence also plays an important role in the life of an individual. The development of intelligence requires locomotors behavior. Walking and grasping are concerned with the training of the student's physical activities and the development of skills.

Table 3: Bloom's Taxonomy of Educational Objectives for Skills-Based Goals

Level of Expertise	Description of Level	Example of Measurable Student Outcome
Perception	Uses sensory cues to guide actions	Some of the colored samples you see will need dilution before you take their spectra. Using only observation, how will you decide which solutions might need to be diluted?
Set	Demonstrates a readiness to take action to perform the task or objective	Describe how you would go about taking the absorbance spectra of a sample of pigments?
Guided Response	Knows steps required to complete the task or objective	Determine the density of a group of sample metals with regular and irregular shapes.
Mechanism	Performs task or objective in a somewhat confident, proficient, and habitual manner	Using the procedure described below, determine the quantity of copper in your unknown ore. Report its mean value and standard deviation.
Complex Overt Response	Performs task or objective in a confident, proficient, and habitual manner	Use titration to determine the Ka for an unknown weak acid.
Adaptation	Performs task or objective as above, but can also modify actions to account for new or problematic situations	You are performing titrations on a series of unknown acids and find a variety of problems with the resulting curves, e.g., only 3.0 ml of base is required for one acid while 75.0 ml is required in another. What can you do to get valid data for all the unknown acids?
Organization	Creates new tasks or objectives incorporating learned ones	Recall your plating and etching experiences with an aluminum substrate. Choose a different metal substrate and design a process to plate, mask, and etch so that a pattern of 4 different metals is created.

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C) CURRICULUM CONSTRUCTION- PRINCIPLES AND EVALUATION OF EXISTING SCHOOL CURRICULUM OF HOME SCIENCE AT SECONDARY LEVEL USING DIFFERENT EVALUATION MODELS

PRINCIPLES of SCHOOL CURRICULUM OF HOME SCIENCE

1. **Principle of need** : The curriculum should suit varying needs of pupils, that is different curriculum for urban and rural children should be there. The curriculum should provide the meeting needs of the pupils primarily, only secondary it should provide for the preparation of pupils for later needs.

2. **Principle of forwardness** : The curriculum designed should raise the standard of life and standard of education of the students.

3. **Principle of community centredness** : Curriculum should be acc. to constructed should be in accordance with the needs and interest of the community. It should be able to tackle the demands of the community.

4. **Principle of child centredness** : Curriculum should be according to needs, interests requirements of the child. Methods of teaching should be child centred as far as possible.

5. **Principle of Utility** : The Science curriculum should be based on principle of utility. The curriculum should help the students in living a wholesome and self-fulfilling life. It should provide the child both academic and social growth.

6. **Principle of Activity Centredness** : The curriculum construction should be based on the consideration of various activities, in side and outside the class room. It can include co-curricular activities like science fairs, science excursions, hobbies etc.

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7. **Principle of elasticity and variety** : The curriculum should provide for great individual differences in order to meet varying tastes and abilities of the pupils. Curriculum should be full of elasticity and variety. It should be broad based capable of satisfying the varying interests and needs of the pupils.

8. **Principle of Integration :** The curriculum should integrate the child's need and activities on one hand and the needs of the society on the other hand which can make improvement in learning.

9. **Principle of balanced curriculum** : There should be a balanced curriculum in every respects. The theory and practical work can be done quite equally and simultaneously. The curriculum should provide for acquaintance with both work and leisure.

Principle of Creativity : Due to creative nature of children the curriculum should be so framed that it provides chance to discover the creative potentials of the children.

11. **Principle of proper organization** : There are many ways of organizing curriculum but the best are Direct Method or unit method. The curriculum should be so organized that the various topics may easily be inter changed not only within any grade during the year but from grade to grade.

12. **Principle of conversation** : While constructing curriculum those topics should also be included which help in preservation and transmission of culture and civilization.

13. **Principle of readiness** : The curriculum should be based on sound principles of learning. The learning environment should be geared to the students needs and maturity should be provided. Matching the curriculum to the stage of the student's mental development is vital.

14. **Principle of correlation with other subjects** : Curriculum is divided into various subjects only for the sake of convenience, but now the importance of correlation is fully realized and educationists are thinking of vertical as well as horizontal

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correction, so curriculum of science should be correlated with other school subjects social and physical environment.

Unit-III

A) APPROACHES AND METHODS OF TEACHING HOME SCIENCE- LECTURE CUM DEMONSTRATION METHOD, DISCUSSION METHOD, PROJECT METHOD, LABORATORY METHOD, PROBLEM SOLVING METHOD AND FIELD TRIPS IN TEACHING OF HOME SCIENCE.

METHOD:

Method is a procedure adopted by the teacher to make learning easy and effective. Generally speaking method is the "process of planning, guidance sharing and evaluating learning with a group of students". A method is composed of several important steps. These steps are systematically and logically arranged by the teacher. Many of steps which are used in one method may also be used in other methods.

According to Broudy:- "Method refers to the formal structure of the sequence of acts commonly denoted by instruction .The term 'method' covers both strategies and tactics of teaching and involves the choice of what is to be taught, and in which order it is to be presented."

According to Wesley's view:- "Teaching method is the teacher-operated activity by which students get knowledge."

According to Binning and Binning: - "Teaching method is the mobile activity of educational process."

LECTURE-CUM-DEMONSTRATION METHOD,

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Introduction : This method is also called as **Demonstration method.** The main drawback with the lecture method is that it is one sided process. The teacher talks too much and the students are totally neglected. The best method is that which involves a kind of ebb and flow b/w the teacher and taught, where the teacher and the children are really part of an educative process. It is in an atmosphere of this kind that children develop in the best way. The demonstration method takes stock of this fact and thus while in a lecture method the teacher merely talks.

Meaning : Demonstration means 'to show'. In the lecture method teacher just tells but in the demonstration method he also shows and illustrates certain fundamental phenomena and the various applications of abstract principles through a series of experiments. This method is also in accordance with the maxims of teaching **"from concrete to Abstract."** The students see the actual apparatus and experiment and thereby they feel interested in learning.

Characteristics of Good Demonstration :

1. **Visibility** : A demonstration should be visible in most of its significant details to all the students of the class.

2. **One major idea at a time** : Only one major idea at a time should be taken so that students become aware of the objectives of demonstration.

3. **Clear Cut** : The demonstration should be clear cut, for this, the teacher should be clear of the purpose of demonstration. He should know the aims of demonstration before hand.

4. **Convincing** : It should be convincing so that students get a training in scientific method of solving problem.

5. **Rehearsal** : It is necessary before demonstration so that teacher becomes well versed in handling the apparatus.

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6. **Supplemented with other teaching aids** : Demonstration should be supplemented with other teaching aids like charts, models etc. to make it more interesting.

7. **Asking relevant questions** : The teacher should ask suitable and relevant reflective type questions. It also helps to keep the students alert.

8. **Neat, Clean & Tidiness** : The teacher should see the general order, neatness, cleanliness and tidiness of the demonstration table. The table should be occupied by the apparatus and materials relevant to the lesson. It is always better to keep the used apparatus right hand side and the apparatus to be used on left hand side.

Sequence of Experiments : The teacher should carry out the experiments in such a way that the students should learn how to carry it out by themselves.

10. **Simple & Speedy** : Demonstration should be simple and speedy.

11. **Acc. to time and season** : While planning and performing the demonstration, it should be kept in mind that the demonstration should be in accordance with the time and season otherwise it will prove to a failure and wastage of time.

12. **To Write Observation** : The students should be asked to draw diagrams and to write, what they observe.

13. **Black Board** : The blackboard behind the demonstration table helps the teacher to summarise the principles and concepts related and also the student to note it down.

14. **Sufficient time** : For recording data, the students should be give sufficient time.

15. **Apparatus** : The apparatus used for demonstration should be larger in size.

16. **Teacher to act as performer** : For maintaining the interest of the students sometimes the teacher act as a performer, showman or actor.

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17. **Spare parts for the apparatus** : Reserve or spare parts for the apparatus should be there on the table.

Common Errors in a Demonstration lessons :

1. The demonstration may not to be visible to all.

2. The set up of apparatus may not be at a good height.

3. The lighting and ventilation may not be adequate.

The speed of demonstration may not be accurate, either too fast or too slow.

5. The apparatus may not be ready to use.

6. Students are not involved.

7. The purpose of demonstration may not be clear.

8. The teacher may arrive at the generalization himself without getting it done by the students.

9. The students may not be given sufficient time.

10. The apparatus may not be arranged in proper order and the teacher may flounder while performing the experiment.

Conduct of Lecture-cum-Demonstration

1. **Planning & Preparation** : While planning a demonstration the following points should be kept in a mind.

a) **Subject matter** : The subject matter should be thoroughly prepared. If the teacher knows it, even then he should go through the subject matter.

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b) **Lesson Planning** : The teacher should plan how to introduce the lesson, the way to present it, types of questions to be asked in experimentation and recapitulation.

c) **Rehearsal of experiment** : The demonstration should be rehearsal well in advance as it provides confidence to the teacher too. In this way, his lesson will go on smoothly and systematically.

d) **Collection and arrangement of apparatus** : The apparatus and chemicals should be properly arranged on the demonstration table. Only such materials should be pro kept on the table as are required for **Introduction of Lesson** : The lesson may be introduced on the following basis :

a) Student's personal experience or incident.

b) Student's environment

c) Telling story

d) A simple and interesting experiment.

3. **Presentation of the subject matter** :

a) The teacher must study the subject matter on broad basis taking into consideration the interest and experience of students.

b) While demonstration is going on, questions should also be asked which helps the students to understand the underlying principles.

c) The teacher should try to illustrate the facts and principles. the experiment in progress. b/z too many things at a time divert the attention of students.

d) Language used by teacher should be simple and clear.

4. Experimentation

a) Demonstration should be properly spaced and striking, clear and convincing.

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b) The demonstration table should have only apparatus related to the lesson.

c) The experiment should be simple and speedy.

d) All the apparatus should not be displayed at once.

e) Reserve or spare apparatus can be kept for emergency.

5. **Black board work** : A big black board behind the demonstration table is necessary in order to summarise the principles and other matters of demonstration and also to draw necessary diagrams and sketches.

Advantages

1. **Economical** : This method is economical as it helps in economizing resources. Some equipments are too expensive for general use and thus demonstrating the experiment to the whole class becomes an economical exercise.

2. **Psychological Method** : Demonstration method is psychological as the students are shown concrete things. They have not to enter into false imagination.

3. **Student participation** : This is one of the best techniques to get participation of students.

4. **Save time & effort** : This method saves teacher's time and effort as it is easier to perform one experiment than to supervise 45 experiments.

5. **Helpful to promote useful discussion** : This method can help to promote relevant and useful discussion in the classroom and also provides opportunity to question and to review.

6. **More efficient method** : Discussion method is more efficient than laboratory method as a teacher is more competent to handle apparatus than students.

7. **Activity Centred** : By this methods students are kept busy in various activities like observing, taking notes, answering questions, drawing diagrams etc.

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8. **Useful for all types of students** : This method is suitable for all types of students i.e. from average to above average.

Helpful for teacher : This method is useful and helpful for teacher also he can be in position to explain each and every step and to ensure that all the students see and interpret all the work in uniform manner.

Disadvantages

1. **Ignore maxim of education** : The maxim of education "Learning by Doing" and the principle of psychology of learning has no place in this method. The students don't get chance to perform experiment themselves.

2. **Visibility** : It is main problem for a teacher b/z all the students may not be able to see the details and results of a demonstration.

3. **Speed of Experiment** : Either too fast or too slow speed of demonstration some times may create trouble in understanding what is going on.

4. **Ignore individual difference** : This method totally ignores the main principle of psychology 'there is always individual difference' slow learners and genius are made to sail in the same boat.

5. **Hinder progress** : This method some how hinder the development of laboratory skills among the students.

6. **Not useful for developing scientific attitude** : This method does n't help the students for inculcation of scientific attitude.

7. **Problem of indiscipline** : Some time students may get into mischief, thereby creating a problem of indiscipline.

PROJECT METHOD

This method is a modern contribution to educational theory and practice. In a way this method is an extension of problem method. This method is based on the philosophy of

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pragmatism. John Dewey wanted that education should be for life and through life. He put the child in the real life situation of learning. He assigned spontaneous, purposeful and socialized activities to the child.

According to Kilpatrick- A project is, "Whole hearted purposeful activity proceeding in social environment."

According to Ballad –"A project is a bit of real life that had been imparted into the school."

According to Dr. J.A. Stevenson- "A project is a problematic act carried to completion in its natural setting."

Characteristics of a good project

1. **Modern activities**: A good project is one which has the integration of various modern activities
2. **Useful and realistic**: Good projects are always useful and realistic. They are not merely theoretical.
3. **Economical**: Good projects are always economical in nature. They are never too expensive. Such projects are of such a nature that with minimum of time and expenses one can accrue the maximum advantage.
4. **Best experiences**: A good project is always based on the best experiences of children. Such type of projects also provides new wholesome experiences to the children which are of a very high standard.
5. **According to the mental level:** A good project is also according to the mental level of the students. So it can win over their goodwill.
6. **Availability of resources**: A good project is one for the execution of which the resources are locally available. Otherwise the pupils will have to face a lot of hardship and expenditure for the execution of the project.

Basic principle of project method

1. **The principle of reality**: In projects the students are provided with opportunities to exercise their powers in real life situations. So this method prepares them to face the challenges of life with zeal and determination.

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2. **The principle of freedom**: In project method the children are free to choose the activities according to their tastes, capacities and powers and not forced upon them by the teacher.
3. **The principle of utility**: A good project must be valuable socially. It should have a direct bearing on children's life and must fulfill their long standing demands.
4. **The principle of purpose**: A project is never purposeless. On account of there being a purpose the students pour in their whole heart into the project.
5. **Principle of interest**: When there is a strong project in that case activity takes on great significance and becomes of absorbing interest to the child.
6. **The principle of activity**: Child is active by nature. He wants to do things. An educationally sound method is one which provides opportunities to the child to do things for himself.
7. **The principle of within reach of the children**: The material required for the completion of the project should easily be available to the teachers and students.
8. **The principle of economy**: A good project should be economical. It means neither it is expensive nor does it take much time and efforts.
9. **The principle of experience**: The ultimate aim is to gain useful experiences knowledge for the sake of knowledge is of no use. So the child should get knowledge through experiences.

Merits of Project Method

By making use of this method, following advantages are gained by teacher and students:

a. As students get proper freedom to execute the project in accordance with their interest and abilities, because of which they get their psychological needs satisfied to considerable extent.

b. This method is not only subject centered, but due importance is being provided to the students also. Students are permitted to choose projects on their own, as a result of which they make use of their abilities to maximum possible extent.

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c. Through this method, students are provided with various opportunities by which they can satisfy their interests and desires.

d. Habit of critical thinking gets developed among the students through this method. Not only get this, an urge to make use of scientific methods to solve various problems also developed among the students through this method.

e. With this method, students get the ample chances in which they can develop coordination among their body and mind. Through this method, teacher can lead a well balanced development of the students.

f. Through this method, science teaching can be done with considerable success, as science is a practical subject and this method is also scientific and practical in nature. The selected project correlates with the real problems of life which students confront in their everyday life. Thus, they find it quite interesting to sort out such problems. Not only this, through the information gained, they become able to solve out their own life problems independently and effectively.

g. This method helps in promoting social interaction and co-operation among the students, as they have to work in a group and have to interact with various persons for gathering information. As the student works with full agreement of the social needs, he gets moulded in accordance with the social needs of the society in which he lives or exists. Thus, through this method, sense of social cooperation and responsibility get developed among the students, by which they can become responsible citizens in the future.

h. As students gain knowledge directly through their own efforts, thus, they acquire permanent kind of information, which is retained by them since a long period of time.

i. Mostly the projects are undertaken in classroom as classroom assignments, because of which load of home work from the students get reduced to considerable extent.

Demerits of Project Method

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This method has certain limitations, which are as follows:

. a. This method takes a lot of time to plan and execute a single project. As the time available with the teacher is limited in the schools, thus they find it difficult to make use of this method in their class.

b. It is not possible to design different projects for different topics and it is also not possible to cover all the topics or content in a single project. Thus, this method becomes impractical in nature.

c. For proper execution of a project, large number of financial resources are required, which seems difficult to arrange in our nation as we have to face shortage of resources in every sphere of life.

d. Such method can only be proving successful if the teacher is highly knowledgeable, alert and exceptionally gifted. The responsibility of teacher becomes multil-folded as right from providing situations and opportunities for the selection of projection, he provides the students with all the provisions by which they can execute the project successfully.

e. Systematic and adequate learning is not provided by this method, as it is a method of incidental learning. Through this method, students learn only what is required by them in relation to the completion of the projects. Thus, through this process, it is not possible to treat the curricular areas in systematic and orderly manner.

f. Generally it is found that teachers do not possess much information regarding the manner in which this method should be used as a result of which they hesitate from using this method, as a result of which, its utility remains more or less limited to negligible extent.

Narration cum Discussion method.

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You know teaching should be a two way process in order to be successful. So the narration method & storey telling methods are not fulfilling this objective. Students are not getting opportunities to actively participate in this process of teaching. But this cannot be totally revamped from our teaching process. Therefore the narration cum discussion method originated which will be more beneficial than only individual methods of teaching.

The narration cum discussion method provides dual benefits of listening to teacher as well as participation of students. This method provides adequate scope for student's participation in the selection of topic or problem presenting ideas, analyzing ideas through exchange of ideas and taking decision with suitable support material. Discussion is almost equally shared by pupils and teachers.

On the whole, truth is searched and conclusions are drawn through free exchange of opinions. Narration cum discussion is a group activity and a process of collective decision making.

Steps and procedures

Teaching of History through this method calls for systematic planning. The entire teaching – learning process is carried on mainly through three steps (1) Preparation (ii) Conduct of discussion and (iii) Evaluation.

1. Preparation It is an important step in planning. The topic must be carefully selected and the teacher must be confident of the details of the theme. Points to be discussed should be informed to students earlier. The topic and questions may be written on the black board for this purpose. Both the teacher and students should be prepared for taking active part in the discussion.

II. Conduct of Discussion

This steps is the most significant part of teaching; it includes arrangement of seats, maintenance of discipline, initiation and presentation of the topic, students

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participation in a released, free and informal atmosphere. All students should be encouraged to participate in the discussion and express their own points of view without any hesitation and reservation. Such discussion will be a process of loud, as well as silent thinking, it is an experience in cooperation, not in competition.

III. Evaluation

This steps on discussion and narration aims at providing information, facts figures, removing doubts and difficulties, changing attitudes, developing interests and good qualities that are necessary for effective citizenship. All these objectives are evaluated at this stage and measures are taken for making up the deficiencies, if any.

Role of Teacher The teacher has to play an important role in this teaching – learning process. He has to take initiative and all the steps that are found necessary for encouraging student's participation. Success of this method largely depends on the better qualification, wide knowledge, varied skills, ample resourcefullness and favourable attitude of the teacher. The teacher has to direct all the activities of the class and co-ordinate their opinions and views express there on the topic. He has to bring about solution of the problems faced and truth out of all controversial arguments and counter arguments. He is required to play the role of a director or manger of the whole show and take all the steps for ensuring realization of lear

Advantages

1) This method of teaching is very suitable for higher classes.
2) It discourages rote– learning and encourages understanding and critical thinking
3) It enables students to discover facts, collect relevant information and clarify doubts.

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4) It promotes academic work through joint and cooperative efforts.

5) It facilitates pupil's participation and individual initiative.

6) It enables the teacher to identify potentiality of the students and provide favourable scope for its development.

7) It enhances attentiveness, interest speaking, capacity and self – evaluation.

Limitations

1) This method is not effective for junior class students.

2) It calls for immense earlier planning and preparation, which most of the teacher do not afford.

3) Without proper control & co-ordination over the discussion, it will be difficult to arrive at conclusion and may lead to wastage of time and energy.

Students gain sufficient knowledge through narration. The main aim of narration is to provide knowledge to students of indirect things where as discussion is an educational group activity in which teacher and the students talk over some topic. Narration cum discussion method provides knowledge about a problem or topic in which the students are actively involved and clarified about the topic. ning objectives

PROBLEM SOLVING METHOD

Everybody, at some time or the other, is confronted with serious problem of life or with minor problems needing immediate attention. Education is considered to be a preparation or a training ground for meeting this challenge. Students are to be trained in the school for social participation and to be equipped to meet the problem of complex life. Knowledge, thus gained in the school becomes useful and purposeful, and the students become active participants in the entire process.

According to Rusk, "Problem solving may be defined as planned attack upon a difficulty or perplexity for the purpose of finding a satisfactory solution."

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According to Ross, “Problem solving is an educational device whereby by the teacher and the pupils attempt in a conscious, planned, purposeful effort to arrive at an explanation or solution to some educationally significant difficulty.”

Steps in problem solving

1. **Recognition of the problem:**The first step involved in problem solving is recognition of the problem. A problem arises out of a situation. A situation should be created by the teacher in which the students feel the presence of the problem and the need to solve it.
2. **Interpretation and delimitation of the problem:** Once the problem has been recognizing, it must be properly interpreted, defined and delimited. The teacher may explain the problem in detail or the student may interpreted it through discussion. The student should be clear about the scope of the problem. The age, intelligence and interests of the students should be kept in mind at this stage.
3. **Collection of data:** After students have grasped the meaning of the problem they must be stimulated to collect relevant data in a systematic manner. The teacher may invite suggestions from the students regarding the relevant material.
4. **Organisation and evaluation of data:** After collecting data, it should be properly organized and evaluated. The superfluous materials should be eliminated. The teacher should help the students in eliminating the irrelevant data.
5. **Formulation of tentative solutions:** All interference drawn on the data must be considered tentatively.
6. **Establishing the final conclusion:** Tentative solutions are pooled together. Discussion takes place and the students are encouraged to take part in discussion. Wrong interference are rejected and final conclusion is drawn on the basis of logical and collecting thinking.
7. **Verification of result:** After arriving at final conclusion, kit may be verified. Its validity may be tested in various ways: a. By applying the hypothesis to new situation, b. By experimenting further with it, c. By collecting new data through study and investigation.

Merits of problem solving method

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1. **Intellectual development**: It develops power of thinking and reasoning of students. It stimulate intellectual pursuits and develops power of critical judgment.
2. **Development of social qualities**: Problem solving method provides valuable social experiences to students. They solve the problem through joint and collective efforts. Various social qualities like discipline, social sensitiveness, cooperation, fellow feeling, open mindedness, and tolerance are developed.
3. **Development of initiative and self dependence**: Students learn self dependence and initiative as they have to depend upon themselves for the solution of their problems.
4. **Development of study habits**: Students develop desirable study habits. They have to read various books. They develop the habit of selective study. As they have to solve many problems, they tend to be critical in studies.
5. **Development of self expression:**Students perform purposeful activities and get training in self expression through discussion during the solution of the problem.
6. **Assimilation of knowledge:** Knowledge is gained as result of purposeful activity, connected with students every day life. So it is easily assimilated.
7. **Problems of the life and active participation:** Problem method confirms to life. It prepares the students to meet the problems of life and helps them to learn how to act in the new situations.

Demerits of problem solving method

1. **Time consuming:** Problem solving method is time consuming as children often go astray. The progress of students is very slow because they may not be able to find correct solution and go on repeating incorrect things.
2. **Unsuitable for small children:** The method is not suitable for small children because thet do not have enough background for fruitful discussion of real problems.
3. **Dull and monotonous:** This method will become dull and monotonous if used too frequently.
4. **Lack of trained teachers:** There is shortage of trained teachers to put such method into actual practice.
5. **Lack of suitable books:** There is lack of suitable books for reference and guidance. Books written in traditional style cannot serve this purpose.
6. **Not suitable for lower standard:** This method is useful only for the students of higher classes who possess higher type of thinking required in problem solving.

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7. **Unsuitable for existing system of education:** This method does not fit in the existing system of education. It is difficult to organize syllabus according to the requirements.
8. **Negative physical activity:** Generally problem solving method lays all emphasis on mental or intellectual activity like thinking and reasoning. Physical activity is neglected.

FIELD WORK

Field trip is any activity carried out by a group of learners outside the classroom setting to have firsthand experience of what happens in our environment or real life situation. Field trip/ Excursion provide outdoors experiences and observations from which the students learn. It could cover a few hours and could last as long as a couple of weeks.

Field-trips involve journey with the pupils to observe and investigate situations outside the class-room. Lonergan & Andersen (1988) define "the field" as any place "where supervised learning can take place via firsthand experience, outside the Constraints of the four-walls of classroom setting".

Types of Fieldwork

From the student viewpoint, all field activities can be placed somewhere on two continua: First, between observation and participation; Second, between dependency and Autonomy.

Observational Field work:Observational fieldwork is an important way of passing on staff experience and ideas, and is comparatively easy to organize. The principle problem with observational fieldwork is that students are only required to 'be there' with the result that their attention may actually be elsewhere, especially if the experience is protracted.

- The simplest and most traditional form of observational fieldwork is the 'Cooks Tout' or 'look-see' field visit. Students often describe this type of activity as boring, since they are not deeply engaged in fieldwork process, but it can be useful at the start of a field course, to give a first overview of an unfamiliar

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landscape. Couch (1985) argued that carefully directed observation can be a useful learning method, especially if reinforced by on site tutorial style discussion.

- Students become more engaged, typically, if the tour is on foot and they have the opportunity to converse with staff, rather than being lectured at. This format allows students to make some observations independently and to follow up in an informal way, issues they find interesting with staff.

- During observational fieldwork, if unprompted, students often miss key features, and if prompted, have a tendency to reproduce the staff viewpoint uncritically. Engagement can be encouraged by informing students before the start of the fieldwork that they will be required to submit an assessment describing phenomena that they themselves rather than the staff, have seen.

- The art of field note taking on observational fieldwork always has and continues to cause problem for many students.

Participatory Fieldwork-Participatory fieldwork has the reputation for engaging students' attention and deepening the learning experience. However this is not always true. There is a continuum between staff led and autonomous work and it is probable that this also reflects a continuum of engagement on the part of the student, with students who undertake solo project work usually being more committed than those participating in staff led projects.

The drawbacks of participatory fieldwork is three fold.

- Extensive preparation is often necessary to ensure a satisfactory outcome.
- The project work is more time consuming than the 'Cook's tour'.
- It can be difficult to supervise adequately (for health and safety reasons, if not academic reasons) scattered groups, or worse, individual autonomously operating students.

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Learner-practitioner and Participant observation-

- A variant of participant observation and learner practitioner activity, work placement, is becoming increasingly common. Students are placed with organizations, commercial companies, charities, government, local and national environmental agencies and planning departments and work as an employee of the organization for a period of as little as one week up to a whole year. This can be seen as a new and important format of fieldwork.
- Cooperative departmental research projects involving both students and staff working together in teams to solve active research problems are another development in this area and provide an analogue for the apprenticeship situation.

Advantages of Field Trip

- Field trip provides the student with the opportunity of having first hand knowledge of happening in our environment.
- It helps to generate and sustain student interest in the subject.
- It aids retention of information since the experiences are long lasting.
- It can help the student to develop interest in certain professions.

Disadvantage of Field Trips:

- It may be a waste of time and resource if not well planned.
- It is externally difficult to carry out especially when it requires long distance.
- Accident may occur in the course of Field trip.

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· It results in extra financial expenses on the part of the school parents and even the students.

UNIT-4

A) FOOD, ITS CONSTITUENTS, FUNCTIONS AND SOURCES.
B) CARE AND MAINTENANCE OF COTTON, WOOL AND SILK.
C) GUIDELINES FOR MAKING FLOWER ARRANGEMENT AND RANGOLI.
D) ELEMENTS OF ART IN INTERIOR DECORATION.

(A) FOOD. ITS CONSTITUENTS AND ITS FUNCTIONS AND SOURCES.

FOOD: Food may be defined as something solid, liquid or semi-solid substance of which intake is assimilates by the body for its health and well- being. Food is very important for proper physical as well as mental development of an individual. Food consists of various constituents which are necessary for the health and well-being of an individual.

THE VARIOUS CONSTITUENTS OF FOOD ARE AS FOLLOWS:

1} CARBOHYDRATES: Are energy –giving foods necessary for the proper working of the body.

Function of carbohydrates: It provides energy to body for carrying out the various life processes.

Sources of carbohydrates: Its chief sources are-rice , wheat, potato, barley etc.

2} FATS: Fats are also energy giving nutrients for the body.

Faction of fats: They are necessary for the functioning of the body in a proper way.

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Sources of fats: Its sources are –butter, ghee, oils, mustard oil, nuts.

3} Proteins are the body –building nutrients necessary for the body

Functions of proteins: They help in the proper growth of the muscles and bones of the body and repair of the tissues of the body.

Sources of proteins: Its main sources are- milk, soyabea, egg, groundnut etc.

4} Minerals: are the essential for the growth of the body.

Functions of minerals: These minerals perform various functions of the body such as calcium for good bones, iron for hemoglobin and blood.

Sources of minerals: Its sources differ because of its functioning for eg.milk, egg etc.for calcium green- leafy vegetables, and beetroot for iron.

5} Vitamins: perform different functions acc. to the need of body.

Functions of vitamins: Vitamins are useful for eye-sight, skin, body cells, etc.

Sources of vitamins: Its sources are different fruits for vitamins deficiency.

(C) THE GUIDELINES FOR MAKING RANGOL.

Rangoli plays a significant role in the celebration of the festivals like diwali .It adds to decoration and beauty of our house .It is made mostly at the outermost portion of our house. Some guidelines kept in mind while making a rangoli:

1} The place at which rangoli is to be made should be selected efficiently. It should be a hindrance in the waking path of the members going inside or outside the houses.

2} the material to be used for rangoli can be prepared by colouring rice or wooden scrap. Readymade coloured material can also be used which is easily available in the market.

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3} Then the design should be selected. It can be a pattern of flowers or images.

4} The further processing is carried out by the drawing of design or pattern of rangoli .It can be made by making the design with chalk or using a stencil.

5} At last colures can be filled by keeping in view the design,

Colures to be used etc.

6} Final touch can be added by keeping diyas and candles to make it more graceful and attractive.

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