
UNIT 10 ORGANIZING TEACHING - LEARNING

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10.1 INTRODUCTION

All of us know that contemporary classrooms are highly diverse in nature. Recognizing each child as different and unique in its own sense is a challenge for teachers. But, more important challenge is to teach children with diverse backgrounds. Diversity is not only reflected in terms of socio-cultural and economic backgrounds but also in the possession of knowledge. It is indeed important that today's teacher has to be like a magician. On the one hand, teachers have to use their information and transform them into usable knowledge and on the other hand, they have to find out the ways and means of teaching them rather than just transmitting or transferring them into the knowledge. Teaching always remains a planned behavioural activity and is controlled more by teachers. But in present times it is an activity which may be controlled, guided or facilitated by teachers, depending upon the nature of learners, their grade, content, locale and resources. Normally, instructional process is arranged in a continuum depending on the nature of teaching-learning process (activities) which proceeds in the classroom as teacher centered, child centered, and group centered. Teacher centered

instructional process is conventional in nature and all the teaching-learning processes are within the control of teacher right from planning stage to follow up stage. In child centered process though, the teacher does all the detailing of the activities from planning to execution stage but it is centered around the child. In group centered instructional process, children have the autonomy to plan, organize, manage and review the activities involved in teaching learning process. Before adopting any instructional process, teachers have to keep in mind the certain essentials for selecting an instructional approach. A wise teacher is always eclectic in selecting the instructional approaches.

The present unit will discuss different approaches to designing the instructional processes and their merits and limitations, along with key considerations for selecting an approach.

10.2 OBJECTIVES

After going through this Unit, you will be able to:

- identify various criteria for selecting an approach to instruction;
- describe different approaches of instructional method;
- differentiate between learner centered, teacher centered and group centered approaches to instruction; and
- analyze how an eclectic approach to instruction is used by teacher.

10.3 DESIGNING INSTRUCTIONS

Knowledge of effective teaching and learning has increased significantly in recent years. For example, increase in knowledge of the psychology of child development and learning has provided teachers an intelligent and informed context for instructional decision-making. In addition, knowledge of teaching and learning styles has led to an appreciation of what constitutes the best practice in meeting individual learner needs. Educators recognize, too, that learning is an interactive process, and that learners need to be actively involved in tasks that are achievable, useful, relevant and challenging, if they are to respond successfully to the curriculum challenges posed for them. Above all, however, educators have learned that effective teaching occurs when the learner is placed at the focus of decisions that are made not only about the curriculum itself, but also about the “process” by which the curriculum is delivered. Within this context, there is acknowledgement of the need for positive relationships between teacher and learner.

10.3.1 Basic Consideration for Selecting a Method

Anjali is a science teacher and she has to teach on the topic “Kitchen Chemistry: Acid and Bases”. She is bit confused about the instructional approach to be used in teaching the concept of acid and bases. The concept of acids and bases should also help the learners and their mothers in handling the different home based kitchen chemicals (kitchen products) safely and appropriately. In your life there are times when similar situation arises. What method of instruction do you suggest Anjali should use? Whether there will be a particular method of teaching the content? Which is the best method? What are the considerations Anjali must make while selecting a method.

While selecting an instructional approach a teacher has to follow the basic considerations:

- i) **Learners:** Normally, teacher knows that in a classroom there are learners of diverse backgrounds. This diversity ranges from social, economical to intellectual level. To teach the group of learners of diverse backgrounds, it is necessary for teacher at least a method of instruction should be such that it offers learners to contribute in the teaching-learning process.
- ii) **Grade Level of the Learners:** Next comes consideration for the teacher for selecting a method is the grade level of learners. If learners belong to the lower grade level, a method involving lots of activities may be chosen. But if the grade is higher than it, teacher would select a method wherein teacher would assign the work or distribute the work among learners and learners would be self-involved in the learning process.
- iii) **Subject Matter:** The subject matter is another consideration while selecting method of instruction. The subjects like science and mathematics are scientific in nature, whose major emphasis is to verify the existing knowledge or discover the knowledge or solve the existing problem with rational scientific method. Therefore, appropriate approach to select an instructional method for teaching of science would be inquiry method or problem solving method. But in case of languages, problem solving or inquiry method is inappropriate, as in language teaching it is more often developing skills of language where drill and practice method would be an appropriate one.
- iv) **Intended Learning outcomes:** Another key consideration while selecting the instructional method is the intended learning outcomes as specified in the subject matter or by the teacher. The intended learning outcomes are generally the behavioural changes that take place within learners after the content is taught to them. Normally, intended learning outcomes are framed by teacher but it also depends upon the content to be taught. It is normally set before the teaching-learning process starts. For example, if you want to teach learners about the reflection and its laws, the intended learning outcomes set by the teacher would be:
 - a) learner will be able to define the term reflection,
 - b) learner will be able to state the laws of reflection and
 - c) learner will be able to verify the laws of reflection.
- v) **Learning Environments:** Learning environment refers to the diverse physical, cultural, social environment in which learners learn. It is also called the ecosystem of school or classroom or any environment where teaching-learning process takes place. It includes physical, biological and psychological components and their continuous interactions among them will determine the learning environment. Thus, we can say, learning environment is an ecosystem wherein individual entities play a key role in creating it. For example teachers' beliefs and behaviours, learners' belief and behaviours, school policies, motivation among learners and teachers, learners need and interest, appropriate ventilation and sunlight, etc., make learning environment. Learning environments have both a direct and indirect influence on learning, including their engagement in what is being taught, their motivation to learn, and their sense of well-being, belonging and personal safety. For example, learning

environments filled with sunlight and stimulating educational materials would likely be considered more conducive to learning than learning environment with drab spaces without windows or decoration, incidents of misbehavior, disorder, bullying and illegal activity. How adults interact with learners and how learners interact with one another may also be considered aspects of a learning environment and phrases such as “positive learning environment” or “negative learning environment” are commonly used in reference to social and emotional dimensions of a school or class.

- vi) **Available Resources:** One of the other basic considerations for selecting an approach is available resources. Normally, resources refer to the material resources but they also include human resources. Often teacher requires help from its co-teachers, learners, and others like community members, experts and learners to enhance their abilities and competencies. Also a lot of times the teacher requires material resources like audio-visual and technological aids to supplement or integrate with teaching. Resources help learners to make their knowledge more concrete, permanent and effective.
- vii) **Teacher Ability:** Teacher ability is another criterion that needs to be considered while selecting an instructional method. It is important that teacher must be equipped with the specific abilities i.e. pedagogical- technological- content knowledge.

Check Your Progress

- Note:** a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.
1. What are the basic considerations for selection of an approach to instruction?
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10.4 TEACHER CENTERED METHODS

During the last few decades, there has been a vast change in the instructional process followed by teachers in the classroom. Initially, instruction was based on the behaviouristic approach which has shifted to humanistic and more recently is focused on constructivist approach. But still in many classrooms across the globe, teachers more often use teacher centric methods especially where the size of the classroom is more than fifty. In teacher centric classrooms all the instructional activities and procedures are under the control of the teacher. Teacher plans, prepares and conducts the teaching-learning process including the kind of learning experiences to be provided to learners, and activities to be carried out by the learners. Though, it is teacher controlled, the teacher can bring flexibility into the classroom through learners’ participation. There are various teacher centered instructional methods. Few of them are being discussed in details.

10.4.1 Lecture Method

The word 'lecture' is derived from Latin word 'lectus', which means "that which is read." It wasn't until the 16th century that the word was used to describe oral instruction given by a teacher in front of an audience of learners. Presently, teacher uses lecture method that involves, primarily, an oral presentation given him/her to a group of learners. Many lectures are supplemented by some sort of visual aid, such as a slideshow, a word document, an image, or a film. Some teachers may even use a whiteboard or a chalkboard to emphasize important points in their lectures. It is the most conventional teacher centered instructional method wherein teacher transmits the knowledge and learners are the passive recipients of it. All the activities related to teaching-learning process in the classroom and beyond the classroom, are under the control of the teacher. These activities are planned and rigid in nature. Lecture method is generally applicable to learners who are studying in higher grades and above average. Average and below average learners feel disinterested in transaction of the content through lectures. This method fits into the contents wherein teacher has to extensively focus on narration, memorization and information. It is a method of instruction which is suitable to a classroom of large size wherein large syllabus is to be covered in limited time. It is not suitable to contemporary multicultural classrooms as it does not emphasize two cardinal principles of teaching activity and child-centeredness. As teacher, one should refrain from using lecture method in schools, especially up to secondary level, as it is the stage where child learns better through concrete experiences rather than through mere abstract presentations.

ADVANTAGES OF THE LECTURE METHOD

Lecture method has a few advantages that have made it most used method of teaching for so long. These advantages are discussed below:.

- a) **Teacher control:** Because the lecture is delivered by one authoritative figure – a teacher, a professor, or an instructor, s/he has full control over the transaction of the lesson and the tone of the classroom. S/he is able to shape the course of the lecture. So, lectures remain highly consistent.
- b) **New material:** Lectures are literally just long-winded explanations of information, deemed important by the lecturer. As such, learners can absorb large quantities of new information.
- c) **Effortless:** The lecture method makes the learning process mostly effortless on the part of learners, who need only to pay attention during the lecture and take notes when they feel necessary. Because so little input is required from learners, it's the most clear, straightforward and uncomplicated way to impart learners to large quantities of information – as explained above – and in a way that is controlled and time sensitive. Learners just need to know how to take good notes

DISADVANTAGES OF THE LECTURE METHOD

What's funny about the lecture method is many of the pros listed above could actually be seen as cons as well. Many don't find the lecture method helpful in the least, and you'll find the explanations below:

- a) **One-way communication:** People, who are against the lecture method, find it as a one-way communication. Professors dictate information to learners, who have little or no opportunity to provide their own personal inputs, or examine the information being delivered. Learners just have to sit down and

take information; sometimes, learners will even be forced to agree with the lecture if they want a passing grade. If the lecture is on a sensitive topic over which there is much conflicting discourse, you can imagine the problems this might cause.

- b) **Passive listeners:** Not only do people find the lecture method a biased, one-way communication, they also see it as a wholly passive experience for learners. This isn't just harmful because of the ways we described above. Not being actively engaged in a discussion over certain learning experience can make the learning experience itself seem worthless to a learner. After all, the aim of education isn't to programme learners to think a certain way according to their instructor's lectures but to critically analyze the information being provided and learn how to apply it in different contexts. If learners have no opportunity to discuss the course material with the person delivering the lecture, they will receive only a shallow understanding of the subject being discussed. Simply put, they might even be bored by the material because they will have no opportunity to learn how the subject applies to them on a personal level.
- c) **Strong speaker expectations:** The lecture method can be disadvantageous to the professor as well. Not all academics can be expected to have the same level of public speaking skill. What if a teacher is a genius in his or her field, knows the material from every angle, and is enthusiastic about the subject... but has trouble speaking in front of large groups? The quality of a professor's course should not suffer because s/he is unable to prepare a decent lecture. Just as being lectured to might not be the learning method of choice for many learners, being the one that is expected to do the lecturing might not be the best way for every instructor to present her/his course material.

Check Your Progress

Note: a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

2. How would you enrich your lecture to make it interesting and interactive? Give your view.

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10.4.2 Demonstration Method

Demonstration method works on the principle of activity centeredness and, to some extent, on child centeredness. Therefore, it is better off than the lecture method. Demonstration method is based on performing some activities or experiments in front of learners and learners minutely observe them. Demonstration method has dual purposes. One, it is in accordance to the maxim of teaching-concrete to abstract i.e. concepts, which are abstract in nature and harder to understand, can be demonstrated through an activity or experiment, which would facilitate the teacher to explain them easily and learners too can internalize them effectively. Second, learners can replicate the same demonstration wherein they

can also understand concepts by doing. Moreover, demonstration helps learners develop their motor skills. A good demonstration method depends upon the following aspects:

- i) **Demonstration should be planned and rehearsed:** It is necessary for a teacher to identify the concepts that need to be demonstrated through activity or experiment. Therefore, initial planning and rehearsal is must for a successful demonstration. During planning stage, it is necessary that all the materials required for demonstration should be arranged beforehand and they should be placed on the demonstration table in a sequential manner so that teacher while experimenting needs not to worry about acquiring material as well as searching for it. After that, teacher needs to practice that demonstration as many times as possible so that it leads to expected outcomes.
- ii) **Purpose of demonstration:** Before demonstration, teacher should be clear about its purpose and make the aim of the demonstration clear to learners beforehand. Teacher should clearly state what specific things need to be observed while demonstration, based on which inferences can be drawn or generalization can be made.
- iii) **Active participation of learners:** Teacher should ensure that learners not only observe but also actively participate during the demonstration. It could be in the form of setting up of instruments related to experiment or activity or it can be in the form of seeking answers from the learners. It can also be that learners can write their observations on the blackboard.
- iv) **Training in scientific thinking:** Demonstration method provides learners with opportunity to develop process skills i.e. observe, explain, analyze, infer, verify and review.

MERITS

Demonstration method has several merits over the lecture method. Some of them are as follows:

It inculcates the habit of scientific thinking among learners.

It is psychologically sound method as it takes into account the teaching from concrete to abstract.

It does provide opportunity to learners to participate during demonstration.

Theorization of concepts through verbal mode by teacher is reduced and focus is on demonstration of concepts through experiment or activity..

It is suitable for a multicultural and differential classroom.

LIMITATIONS

Demonstration method is time consuming as lots of effort on the part of teacher is required during planning, organizing and conducting phase.

It is a resourceful method so sometimes teacher is unable to organize the materials required for demonstration.

If demonstration fails in achieving the purpose, then it will have negative impact on the morale and attitude of learners.

All the topics or contents can not be covered through this method.

Activity 1

Identify a topic from your teaching subject at secondary level. Plan a demonstration lesson and deliver it in your classroom. Discuss with learners about its impact and prepare a report.

10.4.3 Team Teaching

The word ‘**team**’ is associated when two or more than two members join together to achieve some specific objectives. In team teaching too, two or more than two teachers with special abilities, competencies and specialization join together and teach in a classroom. According to R.A. Singer (1964), team-teaching may be defined “**as an arrangement whereby two or more teachers cooperatively plan, teach and evaluate one or more class groups in an appropriate and agreed teaching plan in given length of time, so as to take advantage of specific competencies of the team members**”. According to David Warwick (1971), team teaching represents “**a form of organization in which individual teacher declared to pool resources, interests and expertise, in order to devise and implement a scheme of work suitable to the needs of their learners and the facilities of the institution**”.

From the above definitions, it can be concluded that team teaching involves a group of teachers working cooperatively in a team to develop a programme of instruction and share among themselves teaching, evaluation and course improvement.

CHARACTERISTICS OF TEAM TEACHING

- i) Group of teachers:** Team teaching generally involves a group of teachers. The number of teachers depends upon nature and objectives of the course, the size of the class and the facilities to be used.
- ii) Joint responsibilities:** In team teaching, teachers work together and are jointly responsible for planning and instruction of a course.
- iii) Cooperative teaching:** Team teaching is also referred to cooperative teaching, as teachers cooperatively develop a programme of instruction and share in planning, organizing, teaching, evaluation and course improvement.
- iv) Specific competencies:** In team teaching, each individual teacher has specific competencies and work is assigned based on these specific competencies. In team teaching, a teacher needs to be multi-tasking. Teachers, who are good in planning would get an appropriate chance for instruction and length of time so as to use special competencies of teaching content to a group of learners.
- v) Need-centered:** In team teaching, teachers have to consider the needs, interests and development level of their learners and they should teach cooperatively to satisfy learners’ needs and interest and to remove their difficulties and problems.
- vi) Autonomy to teachers:** Team teaching provides autonomy to each of the teachers to choose their teaching related activities and responsibilities as per their needs, interest and abilities.
- vii) Flexibility in teaching:** Team teaching provides enough of flexibility to teachers in scheduling their activities to meet the needs of learners and themselves.

- viii) **Improvement in teaching-learning process:** Team teaching is a resultant of joint collaboration of teachers who have some specific abilities which would immensely help the learners in improvement in learning outcomes.
- ix) **Pooling of resources:** In team teaching, resources are pooled up so as to benefit learners at large and help teachers individually.

ADVANTAGES OF TEAM TEACHING

- a) **Better planning:** In traditional system, teachers separately spend their time individually in planning the same content at different period of time for two different classes or same classes. In team teaching both teachers can devote more time to and energy in planning and preparing content for the benefit of learners.
- b) **Improvement in teaching:** In team teaching, teachers are given the opportunity to observe each other teaching and thus obtain feedback on each other's teaching and thus it helps in improving their skills of teaching. In traditional teaching, teachers are devoid of this opportunity of observing the lesson of each teacher.
- c) **Benefit of specialization:** In team teaching, teachers normally are chosen based on their specialization, which would immensely help learners in getting deeper understanding of the content which is not the case with single teachers.
- d) **Useful for bright learners:** Team teaching would be helpful to bright learners as they get more knowledge about the subject matter, which is sometimes not possible in single teacher classroom. They are given extra work and they do not lose interest as they do in traditional classroom teaching.
- e) **Optimal utilization of resources:** Team teaching provides opportunity for optimal utilization of human resources. Learners are benefited by the best of available teachers.
- f) **Better interaction:** Both teachers and learners get opportunities to interact with experts in a subject or a specialized field. It gives them useful exposure in terms of learning new and specialized field things. It also provides learners motivation and inspiration for reaching the top in the field of learning, instruction and research.
- g) **Flexibility:** It is a highly flexible method of teaching whereas traditional methods of teaching are rigid. It is quite flexible in terms of scheduling and grouping techniques to meet the needs of a particular teaching learning situation. The time table also allows flexibility for the organization of team teaching.

DISADVANTAGES

- a) **Costly method:** Team teaching is costlier than traditional method as it hires team of specialized teachers.
- b) **Lack of material facilities:** Inadequate space and material facilities in the form of large rooms, furniture, laboratory, library, workshops, teaching aids, materials and communication equipments act as a barrier for success of team teaching.
- c) **Lack of cooperation:** The basis of team teaching is cooperation. But sometimes teachers hesitate to cooperate with other teachers. Hence cooperation from all teachers cannot be expected.

- d) **Lack of accountability:** In traditional teaching, a teacher teaches a subject to a particular class and s/he is accountable for the results and progress of learners into the subject. In team teaching, since it is the joint responsibility of team of teachers teaching the learners therefore accountability rests with all the team members. One teacher can shirk its responsibility to other teachers.
- e) **Difficulty in maintaining harmony:** Team teaching requires proper understanding, cooperation and harmony among the members of the team. There is difficulty in maintaining proper team spirit, positive attitude towards the assigned work, proper coordination and harmony among the members of the team.
- f) **Non availability of specialized teachers:** All teachers of the team should have a thorough knowledge of the subject along with the necessary skills to handle the classroom management along with academic activities. Such type of competent and specialized teachers with complete willingness and positive attitude towards team teaching are not available.

Check Your Progress

Note: a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.

3. Discuss in brief about basic features of team-teaching.

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10.5 LEARNER CENTERED METHODS

Learner-centered instruction grew out of the humanistic movement in psychology that focuses on the individual and places the responsibility for meeting needs and achievements of learner. This approach came into existence against the wake of the traditional approach of teacher centered instruction. Rogers (1969) has observed that in this approach learner assumes responsibility in the supervision of the teacher for decisions, actions and consequences. The objective is to help learners use their talents to become self directed, self responsible and independent learners. This approach relies heavily upon the direct and own experiences of learners. According to this approach, learners acquire skills and abilities through activities under the guidance of teacher. Teacher arranges, manages and guides learning activities which are based upon the needs, interests and cognitive development of learners. The role of the teacher in learner centered instruction is to facilitate learner and the learning process. Teacher uses a variety of behaviours to initiate, nurture and maintain a facilitative environment. Learner centered approach is generally characterized by following points:

- I. Learners are active participants in the process of learning.
- II. Learners engage themselves in need based activities under the supervision of teacher.
- III. Learners select content, activities and experiences according to their academic and social needs.

IV. Teachers' functions are more as facilitators.

V. Learners become independent learners.

There are different methods of instruction under learner centered approach. In the present section we will discuss the two important methods of instruction: (i) Inquiry Approach (ii) Problem Solving

10.5.1 Inquiry Approach

Inquiry approach is a scientific method of instruction. The credit of using inquiry approach in teaching goes to John Dewey, who in his publication *how we think?*, presents an alternative approach to passive learning. In 20th century John Dewey, the exponent of discovery learning and reflective thinking says “knowledge is an outcome of inquiry and resource in further inquiry”. Generally speaking, inquiry is the process of finding out by searching for knowledge and understanding. Inquiry involves identifying problems, posing questions and seeking answers. It can be conducted in a variety of ways such as observing nature, predicting outcomes, manipulating variables, analyzing situations and evaluating assertions. Inquiry may involve discussing topics with others, reading printed material, conducting field studies and surveys and carrying out laboratory investigations or all of threes while attempting to discover new knowledge to figure out things and to evaluate products and services. Inquiry teaching may involve many processes or mental activities. The amount of time varies from one period to several months. Most important, these learning activities should begin with learners posing their own questions regarding topics under study. Inquiry method is often incorporated into the instructional process to engage learners in the following: questioning, process skills, discrepant events, inductive activities, deductive activities and information gathering. The inquiry approach requires a skilled teacher who can develop a learning environment that stimulates learner curiosity and desire to investigate. Carefully planned questions can engage thinking and motivate learners to seek information while carefully guided investigative activities can lead learners to make discoveries that have personal meaning. The power of an inquiry-based approach to teaching and learning is its potential to increase intellectual engagement and foster deep understanding through the development of a hands-on, minds-on and ‘research-based disposition’ towards teaching and learning. Inquiry honours the complex, interconnected nature of knowledge construction, striving to provide opportunities for both teachers and learners to collaboratively build test and reflect on their learning (Stephenson, 2007). Inquiry approach requires a high level of interaction among the learner, the teacher, area of study, available resources, and the learning environment. Learners become actively involved in the learning process as they:

- a. act upon their curiosity and interests;
- b. develop questions;
- c. think their way through controversies or dilemmas;
- d. Look at problems analytically;
- e. inquire into their preconceptions and what they already know;
- f. develop, clarify, and test hypotheses and,
- g. draw inferences and generate possible solutions.

Gagne (1963): According to him “enquiry is apparently a set of activities characterized by problem solving approach in which each newly encountered phenomenon becomes challenge for thinking”.

Hampshire College: “It is a form of self directed learning in which learners take more responsibility for determining what they need to learn, identifying resources and how best to learn from them, using resources and reporting their learning, assessing their progress in learning.”

CHARACTERISTICS OF INQUIRY APPROACH

Learning is stimulated by inquiry, i.e. driven by questions or problems

Learning based on a process of seeking knowledge and new understanding

It emphasizes learner-centered approach to teaching in which the role of the teacher is to act as a facilitator

Self-directed learning with learners taking increasing responsibility for their learning and the development of skills in self-reflection.

It is an active approach to learning

STAGES OF INQUIRY BASED INSTRUCTION

Pedaste et al. (2015) while reviewing 32 articles on the different phases of inquiry based learning led to a new inquiry based learning framework that includes five general inquiry phases: Orientation, Conceptualization, Investigation, Conclusion and Discussion. Within these five phases, several sub phases are:

- I. **Orientation**-It refers to stimulating interest and curiosity among learners in relation to the problem at hand. During this phase of learning, topic is introduced by the teacher or learner. Identification of variables and defining the problem is the major outcome of this phase.
- II. **Conceptualization**-It is a process of understanding a concept or concepts belonging to the stated problem. This phase is divided into two sub-phases i.e. questioning and hypothesis generation. In questioning, learner raises several questions(research) based on the stated problem whereas in hypothesis learner forms several tenable solutions linked with the stated problem which are tested and verified, based on the available evidences. Hypotheses are generally based on the research questions. Both questions and hypotheses are based on theoretical justification and contain independent and dependant variables. Thus, the main outcomes of conceptualization are research questions or hypotheses to be investigated by the learner.
- III. **Investigation**- It is third phase of the inquiry where learner turns toward action and starts searching for the solutions in response to the research questions or hypotheses. Investigation includes three sub-phases: exploration, experimentation and data interpretation. Exploration is planned and systematic process of gathering information with the intent of finding a relation among the variables involved (Lin, 2004 cited Padaste, 2015). But, experimentation is making and applying a strategic plan to carry out the action and it is directly linked to hypotheses formation. Testing of hypotheses is generally done in experimentation by manipulating the variables. Data collected through exploration and experimentation is subjected to analysis and interpretation.

It is also called the meaning making stage of the inquiry in relation to the stated variables. This new knowledge is the outcome of this phase and it takes us back to earlier stated research questions and hypotheses.

- IV. Conclusion:** In this phase learners address their original research questions or hypotheses and consider whether these are supported or answered by the results of study. This phase may produce new theoretical insights.
- V. Discussion:** It is the process of presenting findings of particular phases or the whole inquiry cycle by communicating with others and /or controlling the whole learning process or its phases by engaging in reflective activities. Discussion involves two sub-phases: communication and reflection. Communication is an external process and relates to dissemination of new knowledge to peer groups, experts and others so that it may be reviewed on the basis of constructive comments and feedback suggested by them. Reflection is the process of describing, critiquing, evaluating, and discussing the whole or parts of inquiry. Reflection is more of an internal process and it can be done through several activities like narrative journal writing, questioning, writing daily journal, etc.

ADVANTAGES AND LIMITATIONS OF INQUIRY APPROACH INSTRUCTION

Inquiry approach to instruction is based on the premise of self directed learning wherein there is a minimum intervention of teacher. Therefore, this approach to instruction has several advantages than the conventional approach to instruction. But, inquiry approach suffers from several limitations, especially in the Indian classroom context.

ADVANTAGES

- a. Inquiry approach is a self learning method and the learner uses the mental process therefore, it enhances the intellectual capacity of the learner.
- b. Learning is based on the direct experiences of the learner which makes content easier to comprehend.
- c. It develops the ability of learners for experimentation.
- d. Inquiry approach uses multiple senses of the learner therefore it helps learners to understand the concepts more clearly and retain them for longer period of time.
- e. Inquiry is based on constructivist approach thus every time it would be possible that learner will be able to create new knowledge which has sound base on experimentation.
- f. It minimizes verbal learning and gives learner more time to assimilate and accumulate information.

LIMITATIONS

- a. Training of teachers to facilitate learner's learning through inquiry.
- b. Strength of the classroom is always critical for inquiry learning. Inquiry approach is feasible if the classroom strength is small.
- c. School textbooks are not written on the basis of inquiry learning.

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- d. Inquiry learning requires plenty of resources. Normally schools are short of resources.
- e. Inquiry approach is time consuming and it is based on conceptual approach rather than examination oriented approach.
- f. Inquiry approach is time consuming therefore syllabus completion would be bigger issue.

Activity 2

Identify a topic from your teaching subject where you can use inquiry approach. Prepare a plan based on steps explained above and execute it in your classroom. Prepare a report on its effectiveness.

10.5.2 Problem Solving

Problem solving is another learner centered approach to instruction. Problem solving is often used synonymously with inquiry. It presupposes that learners can take on some of the responsibility for their own learning and take personal action to solve problems, resolve conflicts, discuss alternatives and focus on thinking as a vital element of the curriculum. It provides learners with opportunities to use their newly acquired knowledge in meaningful, real-life activities and assists them in working at higher levels of thinking. It is associated with nature of scientific inquiry as well as instructional methodology. Gagne (1977) in his learning theory has placed problem solving at highest level of learning in hierarchy. He pointed out that the end result of problem solving is when the learner actually discovers a higher order rule or generalization and constructs new relationship and meaning for a concept under investigation. Problem solving engages learners in investigations where they raise questions, plan, procedures, collect information and form conclusions.

According to **Risk**, It is planned attack upon a difficulty or perplexity for the purpose of finding a satisfactory solution. It involves reflective thinking and not merely the accumulation of facts or the blind acceptance of ideas which someone in authority has given us.

Kulsan and Stone defined Problem solving in scientific sense means some perplexity in the environment or some unexpected or different occurrence which must be explained.

CHARACTERISTICS OF PROBLEM SOLVING

- i. It begins with the assumption that learning is an active, integrated, and constructive process influenced by social and contextual factors.
- ii. It is characterized by a learner-centered approach with teachers as “facilitators rather than disseminators”
- iii. It is based on purposeful activity.
- iv. It is based on scientific skills and abilities like reflective thinking and reasoning.

METHODS OF PROBLEM SOLVING INSTRUCTION

Problem solving method of instruction is generally based on the assumption that learner adopts this method while solving different problems arising out of teaching a particular content to learners, in the workplace or in daily life. It is more of training to the learner to develop the habit of solving the problems based on the approach. This approach is based on the following:

- (i) Decision making is based on data, rather than hunches.
- (ii) Determining root causes of problems, rather than reacting to superficial symptoms.
- (iii) Devising permanent solutions, rather than relying on quick fixes.

Steps to be followed in this method of instruction are:

I. Recognize and Define the Problem: You must have visited a doctor and have experience of curing yourself especially when the symptoms of your illness resemble the symptoms of the disease you are suffering from. The similar situation can exist in the life of learner and teacher in teaching-learning process. Learner diagnoses the situation, identifies and discusses the symptoms and scope of the problem. Learner uses variety of tools such as brainstorming, interviewing, and completing questionnaires to gather information. Learner raises, reviews, and discards statements of the problem and makes a tentative definition of the underlying problem. While defining the problem, the following points should be kept in mind:

1. It should be worded in a concise, definite and clear language.
2. Problem should contain some keywords which may help in better understanding of the problem.
3. It should be in the form of question or statement.

II. Analyze the Problem to Determine its Root Cause: You must have found that in initial phase when doctor starts treatment based on the symptoms and still the problem persists, the doctor realizes that there's actually a deeper problem that needs attention. However, if the doctor looks deeper to figure out what's causing the problem then only one can fix the underlying systems and processes so that it goes for good. Root Cause Analysis (RCA) is a popular and often-used technique that helps to answer the question of why the problem occurred in the first place. It seeks to identify the origin of a problem using a specific set of steps, with associated tools, to find the primary cause of the problem so that you can:

1. determine what happened;
2. determine why it happened; and
3. figure out what to do to reduce the likelihood that it will happen again.

RCA assumes that systems and events are interrelated. An action in one area triggers an action in another and so on. By tracing back these actions, you can discover where the problem started and how it grew into the symptom you're now facing. It is also the stage wherein you can redefine the problem based on the causes and analysis.

III. Generate Alternative Solutions: At this stage rather than single out a solution learner should explore full range of viable solutions before reaching conclusion. To generate variety of solution learner must:

1. generate as many as possible potential solutions;
2. relate each solution to the cause of the problem; and
3. merge similar or related solutions.

It is also a stage where learner must reduce redundancy and eliminate any possibilities that do not address the causes of the identified problem.

IV. Select a solution: In fourth step, evaluate each potential solution identified in earlier step for its strengths and weaknesses. Selecting a solution entails

searching for the most effective solution by applying two general criteria. An effective solution:

is technically feasible

is acceptable to those who will have to implement it.

Feasibility is determined by asking the following questions: Can it be implemented within a reasonable time? Can it be done within cost limits? Will it work reliably? Will it use staff and equipment efficiently? Is it flexible enough to adapt to changing conditions?

Ask these questions when evaluating a solution’s acceptability: Problem Solving Overview: Do the implementers support the solution, perceiving it as worth their time and energy? Are the risks manageable? Will the solution benefit the persons affected by the problem? Will it benefit the organization?

Selecting a solution requires you to choose one that will be effective – one that has sufficient technical quality to resolve the problem, and is acceptable to those who will implement it.

V. Implement the solution: Choosing a solution does not immediately solve a problem. Putting a solution into action may prove as difficult as deciding one. The implementation stage requires action planning: What must be done? Who will do it? When will it be started? When will key milestones be completed? How will the necessary actions be carried out? Why do these actions lead to a solution?

VI. Evaluate the Outcome: In simplest terms, evaluation is the monitoring of problem till the final solution. It means additional feedback mechanisms to detect the need for midcourse corrections and to ensure that the problem is solved without creating new problems. Collecting data and reporting on what has been accomplished. Finally, it includes reflecting on its processes and results.

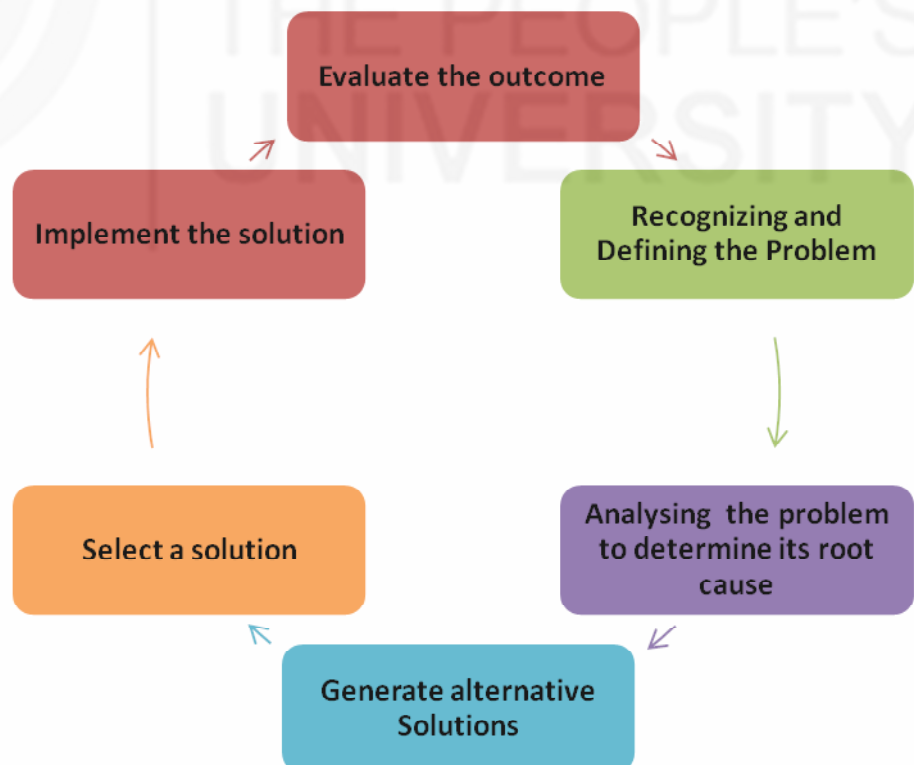


Fig 10.1: Steps of Problem Solving Instruction

ADVANTAGES OF PROBLEM SOLVING METHOD

It ensures the active participation of the learners in teaching-learning activity.

It habituates learner to study regularly and be organized.

It helps learners gain scientific view and thinking.

It makes learners interested in learning.

It helps learners improve their sense of responsibility.

It provides learners opportunity to face the problems boldly and to deal with it through a scientific approach.

It helps learners benefit from others' ideas and help each other.

It predicates the learning to a more logical and doughty foundation.

It improves the ability of learners to identify problem and put forward hypotheses.

It helps learners adopt the idea of calmness in making a decision.

DISADVANTAGES OF PROBLEM SOLVING METHOD

It takes too much time.

It is not possible to apply this method to all disciplines.

It can load some worldly burden on learners.

It can be difficult for learners to provide the materials and sources which is required for solving the problem.

Evaluating the learning through this method can be difficult.

10.5.3 Strategies and Techniques of Conducting Inquiry and Problem Solving

Questioning: Questions are fundamental to learning and also heart of inquiry learning. Asking a right question is critical in investigative work. Questions engage thinking and orient mental activity towards meaningful ends. For instructional purposes questions can be classified into different types: what where, which, when and why. Learners must ask relevant questions and develop ways to search for answers and generate explanations. Questions can also be asked to direct learner thinking along the lines of the process skills such as observing, inferring, hypothesizing and experimenting. Emphasis is placed upon the process of thinking as this applies to learner interaction with issues, data, topics, concepts, materials, and problems. Divergent thinking is encouraged and nurtured as learners recognize that questions often have more than one “good” or “correct” answer. Such thinking leads in many instances to elaboration of further questions. In this way learners come to the realization that knowledge may not be fixed and permanent but may be tentative, emergent, and open to questioning and alternative hypotheses.

Discrepant events: A stimulating approach to initiate inquiry is to use discrepant events. A discrepant event is one that puzzles the observer. It causes the observer to wonder why an event occurred as did; it leaves the observer at a loss for an explanation. An inquiry session initiated through discrepant events usually begins

with a demonstration or film preceded by some directions to focus learners attention on what they are to observe. Discrepant events can be used to stimulate inquiry about numerous concepts and principles. The discrepant event approach receives support from learning psychologists as valid instructional method. Discrepant events influence equilibration and the self-regulatory process, according to the Piagetian theory of intellectual development. Situations that are contrary to what a person expects cause him to wonder what is taking place. With proper guidance the learner figures out the discrepancy and attempts to find out the suitable and acceptable explanation, that rests temporarily at a new cognitive level.

Inductive Activities: In this inquiry approach, learner is presented with learning situation in which they can discover a concept or principle. In this approach the attributes and instances of an idea are encountered first by the learner, followed by naming and discussing the idea. This strategy is the opposite of the deductive inquiry. The information-seeking process of the inductive inquiry method helps learners to establish facts, determine relevant questions, develop ways to pursue these questions and build explanations. Learners are invited to develop and support their own hypotheses. Through inductive inquiry, learners experience the thought processes which require them to move from specific facts and observations to inferences. To help learners accomplish this, the teacher selects a set of events or materials for the lesson. The learner reacts and attempts to construct a meaningful pattern based on personal observations and the observations of others. Learners generally have some kind of theoretical frame when they begin inductive inquiry. The teacher encourages learners to share their thoughts so that the entire class can benefit from individual insights.

Deductive Activities: The focus in deductive inquiry is on moving learners from a generalized principle to specific instances that may be subsumed logically within generalizations. The process of testing generalized assumptions, applying them, and exploring the relationships between, specific elements is stressed. The teacher coordinates the information and presents important principles, themes, or hypotheses. Learners are actively engaged in testing generalizations, gathering information, and applying it to specific examples. Deductive inquiry is based upon the logical assimilation and processing of information.

Check Your Progress

- Note:** a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.

4. How problem solving is different from inquiry method of instruction?
.....
.....
.....

10.6 GROUP CENTERED METHODS

The classroom normally connotes to a group. It means, as a regular feature, teacher adopts group centered method of instruction rather than individual centered. As a result, majority of times instead of facilitating the classroom interactions,

teacher takes control over it and transmits the information to the learners without having any understanding whether learners are able to absorb it. What are the needs of the learners? Do they already possess some knowledge related to the content which has been delivered? This mistake often takes place when we equate our classroom as a group of learners which is actually not true.

Teachers who are of the view that they are teaching to group of learners (classroom) have mistaken the very concept of group. Group always connotes set of individuals that have special characteristics and are limited in numbers. When we say group centered instruction, it means teaching-learning process takes place within the few members who are part of the group. In group centered instructions teacher has the minimal role. Teacher assigns the activity to learners, which needs to be completed by them. It is the responsibility of the group members to plan, organize, manage and execute all the tasks. The role of teacher is to act as more of a facilitator, mentor or guide. The task will be completed under teacher direction. It does not mean that teacher regularly interferes in the activity. The autonomy and the accountability of the learner is key for group centered instruction. Depending upon the task or activity, the group can be small or big in size. Within the group centered instruction following are commonly used in the classroom by teachers and are described below:

10.6.1 Brain Storming

You often come across a problem and try to find out a solution. But, when you and your colleagues or learners sit together for loud thinking to find solution of the problem, you generate a large number of ideas for the solution of a problem. This is normally called '**Brainstorming**'. Brainstorming is generally called out of the box thinking rather than thinking on the established pattern. It is the process of developing new way of looking at things. This is normally applied by teacher when conventional ideas are not working as a solution to the problem.

Rules of Brainstorming

Focus on quantity: It generally focuses on the maxim *quantity breeds quality*. It means greater the number of ideas generated, the greater is the chance of producing a radical and effective solution.

No criticism: In brainstorming 'no criticism' means all ideas are welcome, even if they partly solve the problem or not. Not holding back of ideas is key to it. It helps other group members to focus on extending or adding or modifying the ideas. By suspending the judgment, one creates a supportive atmosphere where participants feel free to generate unusual ideas.

Unusual ideas are welcome: To get a good and long list of ideas, unusual ideas are welcomed. They may open new ways of thinking and provide better solutions than regular ideas. They can be generated by looking from another perspective or setting aside assumptions.

Combine and improve ideas: Good ideas can be combined to form a single very good idea, as suggested by the slogan "1+1=3". This approach is assumed to lead to better and more complete ideas than merely generating new ideas alone. It is believed to stimulate the building of ideas by a process of association.

PROCEDURE OF THE METHOD

As a teacher, you can follow the steps given below for brainstorming:

- i) Set the problem:** The very first step of brainstorming is to define the problem. The problem must be clearly worded and often in a question form. If the problem is too big, the leader should divide it into smaller components; each of the questions is complete and definite.
- ii) Create a Background Memo:** It is a form of invitation and informative letter to the participants, containing the session name, problem, time, date, and place. The problem is described in the form of a question, and some examples are given. The ideas are generally solutions to the problem, and used when the session slows down or goes off-track.
- iii) Select Participants:** The team leader of the brainstorming panel selects the team member. Smaller groups in the brainstorming sessions are more productive than the larger ones. Variation in the composition of team members is key to the brainstorming session. Some of them are as follows:

Several core members of the project who have proved themselves.

Several guests from outside the project, with affinity to the problem.

One idea collector who records the suggested ideas.

- iv) Create a List of Lead Questions:** Normally when we go for brainstorming sessions, every member plunges deeply into it. These lead to sometimes decrease in divergent and convergent thinking. So, as a team leader you must prepare some lead questions which should stimulate creativity by suggesting a lead question to answer, such as *Can we combine these ideas?* or *How about a look from another perspective?*
- v) Conduct Session:** Brainstorming normally works on certain basic rules and every member of the team must adhere to these rules.

Leader presents the problem and if needed provides further explanation.

Leader invites ideas from the brainstorming panel

In the case of paucity of ideas, leader suggests lead questions to encourage creativity.

Every participant presents his or her ideas, and the idea collector records them.

The most associated idea (problem) is elected from the number of ideas.

Ideas need to be elaborated to improve its quality.

Leader organizes the ideas based on the topic goal and encourages discussion. Additional ideas may be generated and categorized.

The whole list is reviewed to ensure that everyone understands the ideas.

Duplicate ideas and obviously infeasible solutions are removed.

The leader thanks all participants and gives each a token of appreciation

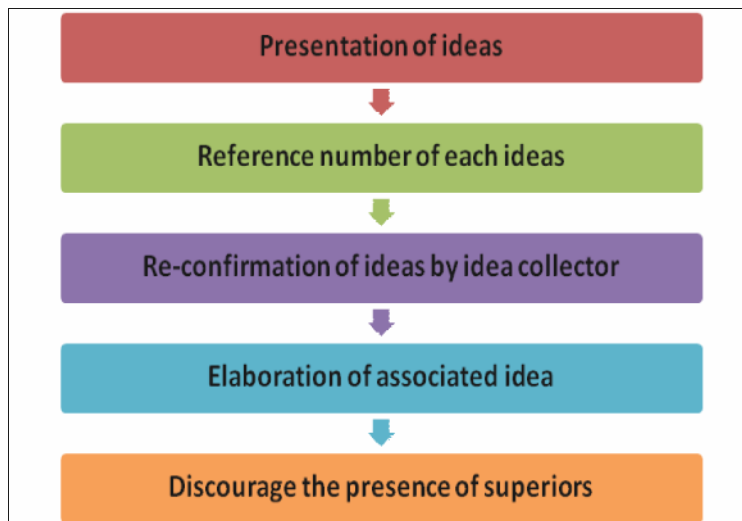


Figure 10.2: Process of Brainstorming

10.6.2 Cooperative Learning

Cooperative learning is yet another successful teaching strategy of group centered instructions. Hassard(1990) pointed out; cooperative learning is a powerful learning instructional method in which groups of learners work together to solve problems and complete learning assignments. It is a deliberate attempt to influence the culture of the classroom by encouraging cooperative actions among learners. Watson (1992) pointed out that cooperative learning have some key elements: One, cooperative groups have two to seven members working together. Second, each of the learners of the group are either assigned different tasks or each learner can study the same body of information. Third, groups are generally heterogeneous with respect to academic ability, gender, social background. Fourth, incentives to the individuals or group are rewarded for success. This reinforces learning and cooperation. In cooperative learning learner must be accountable for their personal achievements and contribute to the group. Experienced teachers know well that it is easy for some learners to ride on the efforts of others during group work; therefore, teachers who are using this strategy should be on guard against this occurrence. Cooperative instruction can take many forms, nevertheless the important steps to be followed in cooperative learning are as follows:

Step 1: Organize learners into groups, using criteria to make decisions regarding this process. Determine the desired outcomes for the investigation to be undertaken, then place the learners into groups accordingly.

Step 2: Identify ideas or topics that will motivate learner inquiry. Some teachers provide a preliminary list of ideas for their learners that relate to the course or unit under study, focusing their thinking process. However, this approach should encourage brainstorming in order to identify additional ideas for investigation by learners.

Step 3: Ask each group to provide a preliminary outline of their study or project. This step immediately places learners on a productive path. When you examine the outline, provide suggestions and guidance. It is the responsibility of the teacher to make sure that each learner in the group knows what exactly s/he has to do.

Step 4: Monitor the investigations. You should have a good idea where each group is while the investigations are carried out. Some inquiries and projects will be conducted during class time, making them easy to monitor. Other investigations

will take place after school and on weekends. For this type of work, take some time during class to ask for information to determine how groups as well as individuals are progressing.

Step 5: Help learners to prepare their final reports so that they do well and feel good about their work. Help learners form an outline for these reports and designate who will do each part of the write-up. The report is an opportunity for learners to demonstrate their process skills, the questions and they attempt to answer, the inferences and graphs they construct to communicate their findings. This phase of work is ideal for helping learners represent knowledge, visualize models, give explanations and demonstrate various skills.

Step 6: Assist each group to identify learners to take part in presenting their report. This aspect of cooperative group work develops presentation skills and confidence in speaking before others.

Step 7: Evaluate the investigations and projects. This often takes the form of assigning points to groups and individuals learners and entering into the grade books.

ADVANTAGES OF COOPERATIVE LEARNING

1. The group provides each member with an opportunity to participate and thereby influences decision making.
2. Face to face learning situations promote an atmosphere of cooperation and empathy seldom achieved in other learning situations.
3. Personal relationships are usually less problematic. There is also a greater chance of different opinions and varied contributions.
4. It encourages broader skills of cooperation and negotiation.
5. It promotes learner autonomy by allowing learners to make their own decisions in the group without being told what to do by the teacher.
6. Although we do not wish any individuals in groups to be completely passive, nevertheless, some learners can choose their level of participation more readily than in a whole-class or pair work situation.

DISADVANTAGES OF COOPERATIVE LEARNING

1. It is likely to be noisy. Some teachers feel that they lose control, and the whole-class feeling which has been painstakingly built up may dissipate when the class is split into smaller entities.
2. Not all the learners enjoy it, since they would prefer to be the focus of the teacher's attention rather than working with their peers. Sometimes learners find themselves in uncongenial groups and wish they could be somewhere else.

ROLE OF THE TEACHER

1. The teacher can merely provide a setting and atmosphere in which such attitudes and behaviours may develop.
2. Careful encouragement and direction is needed constantly by the teacher.
3. The teacher creates and maintains a mutual feeling of responsibility to achieve group goals.
4. The teacher is responsible for contributing specific information when needed.

GROUP ACTIVITIES

It is often been found out by us that we are being typecast in our teaching-learning process and often our classrooms look like a place of burial where neither teacher has the interest to teach in the classroom nor are the learners keenly interested in listening what the teacher is teaching them. As a result both teacher and learner lose interest in the classroom learning process and eventually the entire process become boring after certain period of time. To avoid reaching such situation, it is indeed necessary that you as a classroom leader should arrange such activities and engage all the learners in the classroom so that learners remain motivated and interested in your classroom. It can happen only when you as a teacher arrange group centric activities. Group activities are the ones where involvement or participation of the maximum number of learners is ensured by the teacher. Learner not only participate in it but also enhance knowledge by gathering information and processing it by solving problems and articulating what they have discovered. Each activity provides learners with opportunities to deepen their learning by applying concepts and articulating new knowledge and many of these activities also provide the teacher feedback to the learners' learning. Some of the common group activities, you as a teacher can carry out in your classroom are as follows:

Think–Pair–Share: In this type of activity, as a teacher you ask your learners to think of a question of their own and then write it on the blackboard. Thereafter, teacher provides an opportunity to learners to think and discuss it in pairs, and finally together with the whole class. The success of these activities depends on the nature of the questions posed. This activity works ideally with questions to encourage deeper thinking, problem-solving, and/or critical analysis. The group discussions are critical as they allow learners to articulate their thought processes. Advantages of the think-pair-share include the engagement of all learners in the classroom (particularly the opportunity to give voice to quieter learners who might have difficulty sharing in a larger group), quick feedback for the instructor (e.g., the revelation of learner misconceptions), encouragement and support for higher levels of thinking of learners.

Role Play: This is the most common method normally adopted by teachers for group centric activities. In role play method teacher or learners selects the content to be played or dramatized, often picked up from the history, narrative tales, stories, etc. After that, it is either the teacher who assigns the role or character to learners or learners themselves select a character of their own and present in front of the class or audience. The learners who enact the characters from historical figures, authors, or other characters present the perspective of character. Advantages include motivation to solve a problem or to resolve a conflict for the character, providing a new perspective through which learners can explore or understand an issue and the development of skills, such as writing, leadership, coordination, collaboration and research.

Jigsaw: A Jigsaw is a puzzle type activity (like rubrics) where learners are grouped into teams to solve a problem. This strategy involves learners becoming “experts” on one aspect of a topic, and then sharing their expertise with others. These can be done in one of two ways – either each team works on completing a different portion of the assignment and then contributes their knowledge to the class as a whole, or within each group, one learner

is assigned to a portion of the assignment (the jigsaw comes from the bringing together of various ideas at the end of the activity to produce a solution to the problem). First divide a topic into a few constitutive parts (“puzzle pieces”). After that, form sub-groups of 3-5 learners and assign each sub-group a different “piece” of the topic (or, if the class is large, assign two or more sub-groups to each subtopic).

Each group’s task is to develop expertise on its particular sub-topic through brainstorming, developing ideas, and if time permits, researching. Once learners have become experts on a particular sub-topic, shuffle the groups so that the members of each new group have a different area of expertise. Learners then take turns sharing their expertise with the other group members, thereby creating a completed “puzzle” of knowledge about the main topic. A convenient way to assign different areas of expertise is to distribute handouts of different colours.

For the first stage of the group work, groups are composed of learners with the same colour of handout; for the second stage, each member of the newly formed groups must have a different colour of handout. The jigsaw helps to avoid tiresome plenary sessions because most of the information is shared in small groups.

This method can be expanded by having learners develop expertise about their sub-topics first through independent research outside of class. Then, when they meet with those who have the same subtopic, they can clarify and expand on their expertise before moving on to a new group. One potential drawback is that learners hear only one group’s expertise on a particular topic and don’t benefit as much from the insight of the whole class. To address this issue, you could collect a written record of each group’s work and create a master document—a truly complete puzzle—on the topic. The advantages of the jigsaw include the ability to explore substantive problems or readings, the engagement of all learners with the material and in the process of working together, learning from each other, and sharing and critically analyzing a diversity of ideas.

Circle of Voices: In this method, learners are given a topic and allowed a few minutes to organize their thoughts about it. Then the discussion begins, with each learner having up to three minutes (or choose a different length) of uninterrupted time to speak. During this time, no one else is allowed to say anything. After everyone has spoken once, open the floor within the subgroup for general discussion. Specify that learners should only build on what someone else has said, not on their own ideas; also, at this point, they should not introduce new ideas.

Snowball groups/pyramids: This method involves progressive doubling: learners first work alone, then in pairs, then in fours, and so on. In most cases, after working in fours, learners come together for a plenary session in which their conclusions or solutions are pooled. Provide a sequence of increasingly complex tasks so that learners do not become bored with repeated discussion at multiple stages. For example, have learners record a few questions that relate to the class topic. In pairs, learners try to answer one another’s questions. Pairs join together to make fours and identify, depending on the topic, either unanswered questions or areas of controversy or relevant principles based on their previous discussions. Back in the large

class group, one representative from each group reports the group's conclusions (Habeshaw et al, 1984; Jaques, 2000).

Fishbowl: This method involves one group observing another group. The first group forms a circle and either discusses an issue or topic, does a roleplay, or performs a brief drama. The second group forms a circle around the inner group. Depending on the inner group's task and the context of your course, the outer group can look for themes, patterns, soundness of argument, etc., in the inner group's discussion, analyze the inner group's functioning as a group, or simply watch and comment on the role play. Debrief with both groups at the end in a plenary to capture their experiences. Be aware that the outer group members can become bored if their task is not challenging enough. You could have groups switch places and roles to help with this. Also note that the inner group could feel inhibited because of the observers; mitigate this concern by asking for volunteers to participate in the inner circle or by specifying that each learner will have a chance to be both inner and outer group members. Although this method is easiest to implement in small classes, you could also expand it so that multiple "fishbowls" are occurring at once.

Activity 3

Organize a discussion on usefulness of cooperative learning methods at secondary level with your teacher colleagues. Prepare report on their view points on its utility.

10.6.3 Discussion Method

The inception of the discussion method of instruction could be traced out during the time of pre-Vedic period where Gurus used it for deliberations among learners. Even during the ancient Greek period, the great philosophers like Plato and Socrates used this method extensively for deliberations during teaching-learning process. One can say with authority that discussion method is one of the oldest methods of instruction. Discussion is a method in which the teacher leads or guides the learners in expressing their opinions and ideas with a view to identifying and solving problems collectively. Oyedjeji (1996) explained that the discussion method works on the principle that the knowledge and ideas of several people are more likely to find solutions or answers to specific problems or topics. This is in line with the saying that "Two good heads are better than one". Discussion method of teaching engages both teachers and learners in thinking. It also develops in learners social skills of talking and listening.

According to the James Lee "the discussion is an educational group activity in which the teacher and the taught talk over the problem." Discussion is a kind of reflective thinking by two or more persons, who cooperatively exchange information and ideas in an effort to solve problems or to gain understanding of a problem. In discussion method learners employ the skills of analysis, comparison, evaluation and conclusion to reach the solution of the problem.

According to Stephens and Stephens (2005), discussion as a process of giving and talking, speaking and listening, describing and witnessing which helps expand horizons and foster mutual understanding. They explain further that it is only through discussion that one can be exposed to new points of view and exposure increases understanding and renews motivation to continue learning. Bridges (1988)

notes that discussion is concerned with the development of knowledge, understanding or judgment among those people taking part in it. He believes that discussion is more serious than conversation because it requires to be both “mutually responsive” to the different views expressed.

Discussion is a teaching strategy in which the teacher brings learners face to face as they engage in verbal interchange of ideas. The teacher in his interactions with his learners performs a variety of roles. As a teacher, his main business is to transmit the knowledge, and in doing so, s/he specifies the objective of lesson and examines the needs and background of the learners’ relevance of the topic and its suitability. While applying the discussion strategy, teacher plays the role of a manager, a guide, an initiator and a summarizer. Discussion method is generally used for following purposes: laying plans for new work; making decisions for future action; sharing information; obtaining and gaining respect for various points of view; clarifying ideas; evaluating progress, etc.

Thus discussion method of instruction has the following characteristics:

- i. Discussion method is based on the exchange of ideas, concepts, and information among learners.
- ii. It provides learners opportunity to express freely their ideas.
- iii. When shared among the group members, it develops clarity of ideas.
- iv. It is group centered, therefore it stimulates mental activity of each of the members of the group.
- v. In this method, there is a high probability that there is an agreement or disagreement among the group members related to acceptance of an idea.
- vi. It is a systematic process of making a collective decision through competitive cooperation.
- vii. It is oral method of instruction.
- viii. It trains the learners for reflective thinking.

COMPONENTS OF DISCUSSION

There are four main components of discussion:

Leader: In discussion method, planning, selection and organization of content are done by the teacher; therefore teacher normally acquires the role of leader in discussion. It is not that teacher alone can act as a leader. But any senior person, by virtue of its experience and position, can also be the leader of the group discussion. The role of the leader should be of democratic nature wherein s/he not only keeps an overall control of the discussion but also provides proper direction to the discussion. The role of the leader would be to give equal chances to all its members as far as possible to express their ideas or opinions freely by adopting the principle of equality. The main function of the leader is to facilitate the process of group thinking among the members.

Group: Normally, a class or a smaller entity of it comprises the group. A group can be homogeneous or heterogeneous in nature in terms of specific abilities. Ideally a group of heterogeneous social and intellectual backgrounds would serve a better purpose for discussion group as it provides diverse thinking and thus contributes more to the discussion than the homogeneous group.

Problem: Identification of the problem and working for its solution is the key for the discussion. In classroom based discussion, normally it is the responsibility of the teacher to define or state the problem in front of the learners, otherwise it is the senior person in the group who does it. It is important to remember here that the problem should be defined by the teacher or leader in exact manner. Leader or teacher should not impose the problem upon the group of learners. The problem should be in accordance with the abilities, need, interest, relevance and practical utility of the learners.

Content: According to Johnson, the content of the discussion is the body of knowledge, facts and generalization which must be drawn upon, if any problem is to be discussed and resolved. In many cases facts needs to be rediscovered or verified, and sometimes, we need to establish the relationships or verify the assumptions or hypotheses.

PROCEDURE FOR ORGANIZING DISCUSSION

Discussion is a group centered activity and usually, it takes place for the whole class or a small group, therefore it is necessary that leader does it in a very organized manner. The following are the key points for organizing a discussion:

- 1. Planning the discussion:** Discussion methods would produce desirable results, if teachers and learners sit together cooperatively to work out the plan.
- 2. Preparation:** It is indeed necessary that thorough preparation is essential for successful implementation of the plan. The teacher and learners should be widely and deeply read and thus prepare the material critically and contentiously. Points are to be arranged logically. It is necessary that problems should be sensed problems by the learners.
- 3. Conduct of discussion:** The strength of the discussion method is that every member of the group should be free to express their views, ideas and opinions and thus contribute to the progress of discussion. The teacher not only sees that everyone is contributing but also creates an environment which promotes healthy discussion. S/he should also motivate participants by asking questions or providing clues so that discussion moves in the right direction. A relaxed and informal environment is required in the discussion and challenge for the teacher is that it does not turn into a competitive quarrel. The discussion should be result oriented.
- 4. Evaluation:** It involves evaluating the solutions put forward by the learners in light of the problems. The discussion should remove prejudices, change of attitudes, and increase of knowledge.

ADVANTAGES

- It helps in clarifying issues
- It helps in crystallizing the thinking process.
- It helps learners discover what they do not know.
- Discussion is reflective practice.
- It builds social skills among learners.

It provides learners opportunities to speak freely but correctly, respect the ideas of others, share interests, ask questions, and comprehend the problem.

It helps teacher discover talents among the learners.

DISADVANTAGES

It is not suitable for all topics.

Discussion can get out of hand, if not properly controlled, and leads to emotional tension.

Class may turn into a market place.

Confusion may arise as a result of poor management.

It may be dominated by a few members.

Often discussion may go off the track resulting into non-achievement of desired objectives.

Check Your Progress

Note: a) Write your answers in the space given below:
b) Compare your answers with those given at the end of the Unit.

5. Discussion method develops in the learner social skills. Explain?

.....
.....
.....
.....

10.7 CONTEXT SPECIFIC APPROACHES

Method of instruction is the most important link in the total teaching-learning process. It is a link between the pre-determined objectives and the change in the behaviour of the learner. Method of instruction determines the quality of result. It is always a matter of debate whether teacher follows a specific method to teach content or teacher should be eclectic in approach while selecting a method of instruction. Effective teaching is not a set of generic practices, but instead, is a set of context driven decisions about teaching. Effective teachers do not use the same set of practices for every lesson. A good teacher always constantly reflects about his/her work, observes whether learners are learning or not and adjusts his/her practices accordingly (Glickman, 1991).

- 1. Instruction is eclectic:** Teaching is not constrained by a belief that there is one best method of teaching. Teachers should be invited to extend their range of instructional approaches in a secure, risk-taking environment.
- 2. Instruction is tied directly to the success of the learning experience:** Effective instruction occurs when the teacher links sound curriculum development and excellent instructional practice in a successful learning experience. Reciprocal, positive relationships between teacher and learners are also necessary for instruction to be truly effective. This means learner must be viewed as an active participant in the teaching-learning process.

3. **Instruction is empowered professional practice in action:** Instructional judgement must be encouraged and nurtured in classroom professionals so that they acquire the flexibility needed to adapt to instructional practice to meet a wide variety of learner needs.
4. **Instruction integrates the components of the Core Curriculum:** When making instructional decisions, teachers should consider the content, perspectives, and processes specified in the curriculum for a Required Area of Study or a Locally Determined Option, and the appropriate Common Essential Learning. Teachers also need to make decisions regarding adaptation of instruction to meet individual learning needs.
5. **Instruction is generative and dynamic:** Ever changing variables affect instructional decision-making. Educators are encouraged to extend their range of instructional approaches based on a foundation of research, a wide range of practical and theoretical knowledge, and a regard for learners as active participants in the learning process.
6. **Instruction acknowledges a comprehensive understanding of the instructional cycle:** Teachers begin the instructional cycle by assessing individual learning needs, interests, and strengths through observation and consultation with learners. They then determine the instructional approaches required, deliver instruction in a manner appropriate to learners' learning abilities and styles, and evaluate learners' growth-and understanding. The cycle concludes with teachers' self-reflection and further teacher learner consultation.
7. **Instruction finds best expression when educators collaborate to develop, implement, and refine their professional practices:** Instructional practice can be improved through sustained and systematic attention to professional development. Teachers can improve their own instructional practices by participating in professional development programs or working with peers and supervisors. These programs must include elements of the individual reflection.

10.8 LET US SUM UP

Classroom teaching has various components and methods of instruction are one of them. Teacher has various methods of instruction in its armory, which have been learnt either in pre-service or in-service training. Sometimes, teacher innovates methods based on the circumstances of the classroom. There are various criteria which determine the method of instruction to be used in the classroom teaching. These are learner, content, learning environment and learning outcomes. Methods of instruction can broadly be classified as teacher centered approach, learner centered approach and group centered approach. Within each of the approaches, there are several methods of instruction having its own merits and demerits. But it is important for a teacher to be eclectic in approach while choosing a method of instruction.

10.9 UNIT END EXERCISES

1. How learner characteristics influence selection of instructional method?
2. Teacher centered approaches is unsuitable in middle and upper middle classrooms. Why?

3. Why we should adopt learner centered approach of instruction in contemporary classrooms?
4. Cooperative learning develops social skills among the learners. How?
5. Why teachers should be eclectic in approach in selection of teaching methods?

10.10 REFERENCES AND SUGGESTED READINGS

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10.11 ANSWERS TO CHECK YOUR PROGRESS

1. Intended learning outcomes, Nature of content, Learner Characteristics, Teacher ability, Size of the class and available resources
2. Answer based on your understanding.
3. Group of teachers, Joint responsibilities, Cooperative teaching, Specific Competencies, Need- Centered, Autonomy to Teachers, Flexibility in Teaching, Improvement in teaching-learning process, Pooling of Resources
4. Though problem solving and inquiry based instruction are similar in nature, problem solving is different in many respect with inquiry approach. Inquiry approach is the process of starting from observations to develop an understanding of a concept and the process would start out with deciding what concept you wanted to explore whereas problem solving is addressing a situation, occasionally having to determine what the outcome needs to be but usually with that defined and determining how to achieve that outcome. This usually involves comparing the situation to previous experiences, identifying similarities and differences.
5. Discussion is a group centric method wherein members of the group are participating in it. It is important that in group centric instructional method one needs cooperation, decision making, leadership qualities, appreciation of individual differences, respect for ideas, etc.