MICRO TEACHING

INTRODUCTION :

A teacher makes use of a numbers of methods and techniques to bring about effectively learning the techniques include motivating the students explaining, questioning, writing on the black board, using teaching aids and so on. The teacher could ask make use of non-verbal behavioural such as smiling, nodding and gesturing. These groups of activities are called skills

Teaching skills have been identified differently by different authors Gage (1968) defined the teaching skill as specific instructional activities and procedures that a teacher may use in the classroom. According to MC. Integer and White. Teaching skill is a set of related teaching behaviours which is specified types of classroom interaction situations tends to facilitate the achievement of specified type of objectives. All these definitions specify that a teaching skill as a group of teaching acts / behaviours intended to facilitate pupils learning activity directly or indirectly.

DEFINITIONS OF MICRO TEACHING:

Allet D.W. (1966) defined microteaching as a scaled down teaching encounter in class size and class time.

Passi B.K. stresses that the most important point in microteaching is that teaching is practiced is terms of definable, observable, measurable and controllable teaching skills.

Allen and Ryan (1969) while defining microteaching specified the following essential proportions.

* Microteaching is real teaching but complexities of normal classroom are simplified.
* There is emphasis on training for the accomplishment of specified tasks.
* There is increased control of practice
* Normal knowledge of results or feedback dimension is greatly exposed.

ORIGIN OF MICRO TEACHING:

The ideas of microteaching originated for the first time at stanford university in USA when an experimental project on the identification of teaching skill was in progress

under the guidance and supervision of the faculty members. This project was aided by Ford foundation and Kettering foundation.

This instrument could be used for recording the class interaction and the behaviours of the trainee and accurately. This led to the development of a systematic and accurate method of giving feedback to the teacher trainee.

All the steps of microteaching technique:

Plan → Teach → feedback → Replan → Reteach → Refeedback were formulated. Thus the name of microteaching was coined for this method of developing teaching skills in 1963. Since then this technique of teacher training has been widely used in almost all colleges and universities.

The theoritical basis of the stanford approach was initially related to the Psychological theory of behaviourism. However it is more valid to see microteaching as a technique for professional reflection than as a technique for shopping behaviour.

NEEDS OF MICROTEACHING:

* It helps teacher trainees to scrutinize their own teaching is order to discover their strength and weaknesses.

* It reflects their own teaching styles which enables teacher trainee to focus on certain areas of teaching and to view them from different perspectives.

* It makes them concious of developing their own skills and strategies in order to understand their training.

* It helps to purse self-initiated self-directed and self-observed growth.

* It focuses on sharpening and developing specific teaching skills and eliminating errors.

* It enables understanding of behaviours important in classroom teaching.

* It increases the confidence of the behaviour teacher.

* It's in a vehicle of continuous training for both beginners and for senior teachers.

* It provides for repeated practice without adverse consequences to teacher or his students.

* It helps students teacher to acquire hard to attain teaching skill by providing a real situation for practising skills.

* It helps students teacher to attain proficiency in teaching skill in a phased manner as it focuses on a particular skill at a time.

* Provision of immediate feedback makes microteaching more intersting and reliable.

* Since main role is played by the student teacher it is regarded as a student centered method.

CHARACTERISTICS OF MICROTEACHING:

* Microteaching is a teaching training technique and not a teaching method.

* Microteaching is real teaching, through the teaching situation is simulated.

* In microteaching, the teacher trainee practices one specific teaching skill at a time he/she attains mastery over the skill.

* Microteaching is scaled down teaching encounter in class size (5-7 students) content (one concept) and class time in (5-7 minutes).

* Microteaching allows for increased control of practices by providing fudback to the teacher trainee.

* Microteaching is not a substitute but a supplements to the teacher training programme

* Microteaching is a cycle process the predecided model (Plan, teach, fudback, Re-plan, Re-teach, Re-fudback) is repeated till the trainee achieves the expected level of mastery.

PRINCIPLES OF MICROTEACHING TECHNIQUE:

Microteaching is a based on the premise that teaching can be analysed into various component behaviours called teaching skills.

The teaching skill: can be difined, practised, observed, controlled, measured and evaluated.

This techniques tends to be based on skinner's operant conditioning: i.e. Reinforcement on operant response increases the possibilities of its recurrence and non-reinforcement decreases the posibility of recurrence of a response this principle is fundamental to the feedback senior.

Skinner's theory of 'shapping' or successive approximation in aequiring new pattern of behaviour seems to have been applied to teach feedback-reteach pattern in the Microteaching.

The steps involved in behaviour modification suggested by M.C. Donald (1973) such as

(i) Stating the behaviour in operational terms.

(ii) Pre-treatment stage involving measuring entry behaviour.

(iii) Giving actual treatment for behaviour modification

(iv) Fixing criterial for measuring entry

(v) obtaining post-treatment measures are implicit in the microteaching technique.

MICRO TEACHING PROCEDURE :

Microteaching is a method that enables a teacher-trainee to practice one teaching skill till he or she attains mastery over the skill. He/she practices the skill by teaching a simple concept to a small group of students for a short duration of time. This procedure through which a teacher trainee is trained to gain competery over teaching skill.

STEP 1 :

This involves stating the behaviour in operational terms.

STEP 2 :

This refers to fixing of the criteria for measuring behaviour.

STEP 3 :

In this step the entry behaviour of the individuals is measured to know point of initial start.

STEP 4 :

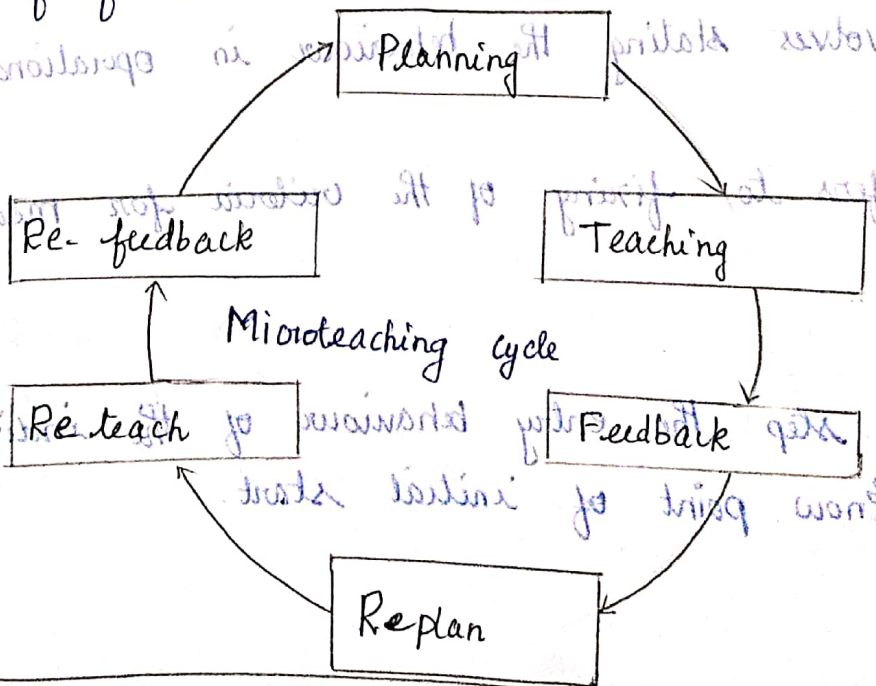
This involves the actual treatment of behaviour modification.

STEP 5 :

The post-treatment measures of changed behaviour are obtained the difference between the measures of the pre and post treatment intricates the extent of behaviour modification the cycle is repeated till desired of behaviour is obtained.

ORIENTATION PHASE :

The orientation phase helps the teacher trainee to get acquainted with the microteaching technique that various teaching skill preparation of micro-teaching skill plan for the component of teaching skill observation of the lesson, the process of feedback and so on.



CYCLE OF OPERATION :

Planning : This involves selection of the skill to be practiced awareness of the components of the skill selection of a suitable concept and the writing of a micro lesson plan.

Teaching : The trainee the lesson in this microteaching setting NCERT has suggested the following setting for microteaching :

TIME : 6 minutes.

No of student : 5 to 10 real Quite pupil or preferably peers.

Supervisor : Teacher educator and / or one or two peers this lesson is being observed by the teacher supervisor and / or peers or mediotaped or audiotaped.

Feedback : The observers analyse the performance and discuss it with the teacher trainee on the basis of their rating using the appraised guide. The feedback should focus on specific behaviour related to the model of the teaching skill. The supervisor can reinforcement behaviour and draw attention to other behaviour and draw attention to other behaviour modification necessary for mantaining the skill.

Replan : In the light of the feedback recieved from the supervisor and peer observes the teacher trainee replans her micro-lesson by writing another microlesson plan or modification the existing one.

Reteach : The teacher-trainee re-teaches the revised lesson to another but comparable group of students the supervisor checks to see whether there is any improvement in skill attainment.

Refeedback : The supervisor assesses the lesson one again and provides the feedback to the trainee this process the feedback repeats still the teacher trainee acquires the required level of competency.

USES OF MICROTEACHING :

Microteaching helps in reducing the complexities of the normal classroom teaching this helps the teacher trainee gain more confidence in real teacher.

* Microteaching creates among the teacher trainee an awareness of the various skill of which teaching is compared.

* Microteaching helps in systamatic and objective analysis of the pattern of classroom communication through specific observation schedules.

* Microteaching simulates the classroom scene and gives the teacher trainee an experance of real teaching.

* Feedback enables the teacher trainees to consciously concentate on specific behaviour modification.

* As microteaching focuses on the modification of behaviour.

* Microteaching provides an effective technique of learning.

* It is a compler task of teaching this helps the teacher-trainees in better understand of the meaning and concept of the term teaching.

* objectives can be defined more easily and more reliable measures change in teacher trainee behaviour can be thought of using behaviourally defined skills.

DEMERITS :

* It is not suitable lower classes.
* It is artificial
* It is not a substitution for whole classroom teaching.
* All the skills are not learnt.

SKILL EMPHASIS:

Attempts have been made to list teaching skills that could be developed among the students teacher. A large number of skills have been identified. However, there is no uniformity in the number and catagories of teaching skills. fourteen teaching skills have been listed in stanford university (Allen and Royan 1969) Whereas Singh L.C. (1979) identified twenty two general teaching skills.

Later on Menon et al (1983) have suggested a list of seventy four skills.

The important skills pertaining to the areas of motivation presentation questioning and recapitulation have been choosen and listed below.

* Skill of introduction
* Skill of Reinforcement
* skill of using blackboard
* Skill of Probing questions
* skill of stimulus variation.

SKILL OF INTRODUCTION

This is a pre-instructional technique the teacher before introducing a lesson has to prepare the minds of the students to receive new knowledge for effective learning the teacher has to ensure students willingness to learn the learning becomes more meaningful when the new knowledge is integrated with previous knowledge. Hence the teacher should set a stage for enabling the students to recall the previous knowledge and relate it with the new experience the following behaviour are essential for set induction.

MAIN COMPONENTS OF THE SKILL ARE,

* Arrest attention
* Focus attention on the topic
* Introduce an element of interest
* Arouse the curiosity.

Arrest attention

Use of voice gesture and eye contact use of audio visual aids Changing the pattern of teacher pupil interaction.

Focus attention on the topic :

Test of the previous knowledge relevant for learning the new topic can also used knowledge acquired from various source like classroom, books, friends, etc.,

* Maintain logical Continuity :

* Integrate the old knowledge with the new knowledge

Introduce the elements of interest

Using teaching aids. Eg: Charts, models, transparencies etc., using other devices. Eg: Analogies, anecdotes, story telling, brief history of mathematics etc.,

Bringing out the significance of the new lesson.

Arouse the curiosity :

Creating a suitable problematic situation, posing an intrigoing problem.

SKILL OF REINFORCEMENT

Reinforcement is strengthening the connection the connection between a stimulus and a response there are two types of reinforcement provided.

i.e., Positive reinforcement and negative reinforcement positive reinforcement provide pleasant experience on a feeling of satisfaction which are behaviours.

Negative reinforcement results in unpleasant experience which helps in weakening the occurence of undesirable responses or behaviours.

MAIN COMPONENTS OF THE SKILL ARE;

* Positive verbal reinforcement
* Positive non-verbal reinforcement
* Writing pupils answers on the blackboard
* Repeating student's answers

Positive verbal reinforcement :

Includes positive verbal reinforcement like yes, excellent, etc., repeating, rephrasing the pupils responses and using the ideas for further development of the lesson.

Extra verbal cues like 'um', 'aha' to encourage and prompts like carry on think again etc., to help the pupils to arrive all appropriate answer.

Positive non-verbal reinforcement :

Includes non-verbal cues like nodding, smiling, looking attentively at responding pupil. putting etc.,

Writing pupil's answers on the blackboard :

The students feel happy when the teacher writes their answers on the blackboard this will motivate the student to answer more and more.

Repeating student's answers:

Teacher should repeat the student's answers by saying once again on asking the other student repeat the same answer. This will make the students to feel proud because the teacher and my friend saying my answers.

SKILL OF USING BLACKBOARD

The pupil on the last bench either cannot be because of writes on the blackboard. Which the teacher might not have checked or because of writting with all sized letters, numbers or diagrams.

A good blackboard work is that which gives a holistical picture of the lesson taught.

The teacher has underlined the important points so which he draws pupil attention by doing so.

Generally a good blackboard work continuous only the important points in the lesson the detail are unnecessary.

Teacher's handwriting is not legible. Legibility is one of the important components of a good blackboard work.

COMPONENTS OF THE SKILL USING BLACKBOARD:

* Legibility
* Neatness
* Appropriateness

Legibility:

Every letter should be distinct there should be adequate spacing between two letters and two words the slantness of each letter should be closest to the vertical. The size of the letters should be large enough to be read from the end of the room. The size of the capital letters should be just bigger that that of the small letters but not so much exaggerated so as to form an obstacle while reading all capital should be of the same size the thickness of the lines should be of same width.

The words and the sentences should be written in the horizontal lines parallel to the base of the blackboard there should be adequate spacing between the lines there should be no over writing that makes blackboard work. Unitely relavant matter which is under focus of classroom should be retained on the blackboard.

Appropriateness:

The content is two types - letter / words sentences and diagrams / illustrations the appropriateness of the work includes continuity brevity and simplicity and drawing attention and focusing.

SKILL OF PROBING QUESTIONS

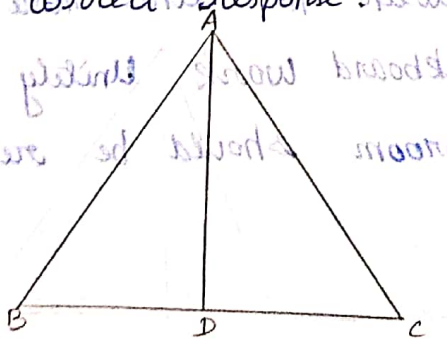
Probing is going deep into the pupils response by asking a number of questions about what they already know and to board them to the correct response or to remove any ambiguity or which has led to such response probing is to be done where there is no response or incorrect response or partially right response

COMPONENTS OF THE SKILL OF PROBING QUESTIONING:

* Prompting
* Seeking further inforcement
* Refocusing
* Redirecting
* Increasing critical awareness

Prompting :

Giving hints or clues to lead the student no response or wrong response to correct response.



Seeking further information :

Questions that lead the students from partially or incomplete response to correct answer asking the students to clarify

elaborate or explain his initial response.

Refocusing:

Questions that help the student to view his correct response in a broader perspective questions that enable the pupils to relate his response with other similar situations questions that enable the pupils to consider the implication of a given response in a more complex and novel situations.

Redirection:

Directing the same questions of other pupils when there is a wrong response incomplete response, partially right response or while prompting or while seeking further information and so on

Increasing Critical awareness:

Asking 'How' and 'Why' of a correct response questions seeking a rationale for the right response.

SKILL OF STIMULUS VARIATION

It is very important for a teacher to secure and sustain pupil's attention for this purpose the teacher uses some gestures body movements makes certain to stimulus variation the skill of stimulus Variation can be defined as deliberated change in the attention drawing behaviour of the teacher in order to secure and sustain Pupil's attention towards the lesson.

COMPONENTS OF THE SKILL :

* Teacher movement
* Teacher gesture
* Change in sensory focus
* Change in speech pattern
* Verbal pupil pattern
* Physical pupil pattern

Teacher Movement :

Purposeful movement of the teacher from spot to another.

Teacher gesture :

Non-verbal cues like body movements, facial expressions, etc., to enhance the value of a message.

Change in sensory focus:

Focusing pupils attention making use of the different senses like hearing, seeing, touching and so on. Changing from aural to visual from visual to aural or a combination of aural and visual.

Change in speech pattern:

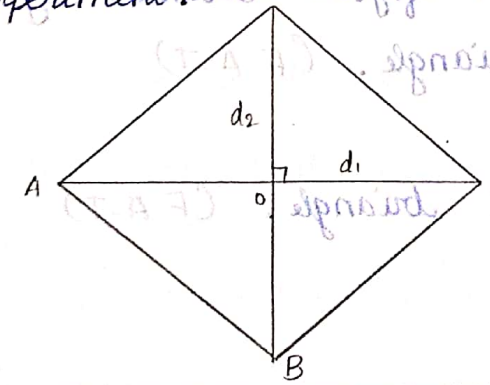
Modulating the voice variation in time, pitch, speed of voice to emphasis certain points Deliberate pause of 3 to 4 seconds.

Verbal pupil pattern:

Involvement of the student through verbal communication style as (i) teacher of group, (ii) teacher of student, (iii) student to student.

Physical pupil pattern:

Variations is physical involvement of the students. Students hold the chart. student helps the teacher in demonstrating an experiment.



SKILL OF INTRODUCTION

Components	Short form
Arrest attention	A.A.
Focus attention on the topic	F.A.T.
Introduce an element of interest	I.E.I.
Arouse curiosity	A.C.

Name of the trainee : V. Janani

Class : Peer group

Skill : Introduction

Topic : Mensuration

Concept : Area of an equilateral triangle

Time : 6 mins.

Teacher : You have learnt about triangles in your previous classes. What is a triangle ? (A.A)

Student : A rectilinear figure bounded by three line segments called a triangle. (F.A.T)

Teacher : Name some triangle. (F.A.T)

SKILL OF INTRODUCTION

Components	1	2	3	4	5	6	7	8	9	10
Arrest attention	✓			✓						
Focus attention on the topic		✓	✓			✓		✓		
Introduce an element of interest					✓		✓			
Arouse curiosity									✓	✓

Student : Isoceles triangle, right angle triangle & equilateral triangle.

Teacher shows cut out of some triangle. (A-A).

Teacher : Yuva, classify these triangle into two groups. (I-E-I)

Student : Classifies the triangle into two groups.

Teacher : Latha, on what basis did you classify the triangle. (F-A-I)

Latha : On the basis of sides of angles.

Teacher : Name the triangles classified on the basis of angles. (F-A-I)

Student : Right angled triangle, acute angle, and obtuse angled triangle.

Teacher : Very good. (shows the cut-out again)

Teacher : Padma, which of these triangles is a right angled triangle? (I-E-I)

Padma : ΔPQR is a right angled triangle.

Teacher : State the theorem applicable for a right angled triangle. (F-A-I)

Student : In a right angled triangle the square of the hypotenuse is equal to the sum of squares of the other two sides containing the right angles.

Teacher : Good. The teacher again focuses on cut-outs of the triangle. (A-A)

Teacher : Priya! pick-up an equilateral triangle from this triangle.

Priya : ΔABC is an equilateral triangle

Teacher : Why it is called an equilateral triangle? (F-A-I)

Student : All sides are equal all angles are equal to 60°.

Teacher : Good what is the formula to find the area of a triangle? (F-A-T)

Student : $\frac{1}{2}bh$.

Teacher : How do you find the area of an equilateral triangle? (A-C)

Student : Silence.

Teacher : Given the side of the equilateral triangle is it possible to find its area? (A-C)

Student : Silence.

Teacher : Today we are going to derive a formula for the area of an equilateral triangle.

SKILL OF REINFORCEMENT

Components	Short form
Positive verbal reinforcement	P.V.R.
Positive non-verbal reinforcement	P.N.V.R.
Writing pupil's answers on the blackboard	W.P.A.B.B.
Repeating student's answers	R.S.A.

Name of the trainee : V. Janani

Class : Peer group

Skill : Reinforcement

Topic : Mensuration

Duration : 6 mins

Concept : Types of triangle

Teacher : You have learnt about triangle in your previous classes. What is a triangle?

Student : A rectilinear figure bounded by 3 lines segments is called triangle.

Teacher : Very good clap for him. (P.V.R & P.N.V.R)

Student : claps.

SKILL OF REINFORCEMENT

Components	1	2	3	4	5	6	7	8	9	10	
Positive verbal reinforcement	✓	✓					✓				
Positive non-verbal reinforcement	✓	✓			✓						
Writing pupil's answers on the blackboard			✓		✓	✓					
Repeating students answers.				✓							

Teacher : On. What basis a triangle is classified ?

Student : two types.

Teacher : What are they ? say Padma.

Padma : On the basis of sides of angles

Teacher : Excellent. clap for her. (P.V.R & P.N.R)

Teacher : Teacher writes padma's answer on the blackboard.
(W.P.A-B.B)

Teacher : Sudha, Repeat padma's answer.

Sudha : On the basis of sides and anglis. (R.S.A)

Teacher : Hm. Ravi you say the triangles which are classified on the basis of sides.

Ravi : Equilateral triangles, isoceles triangle and scalar triangle.

Teacher : Raises his eyebrow and writes the answer on the blackboard. (W.P.A-B.B) & (P.N.V.R)

Teacher : Kalai you say the other type of triangle

Kalai : Acute angle triangle, abtuse angle triangle Right angle triangle.

Teacher : Very good. (Teacher say her answer once again)

Teacher : Writes the answers on the blackboard. (W.P.A.B.B)

Teacher : Monisha read the two types of triangle.

Monisha : On the basis of angle

(i) Right angle triangle

(ii) Acute angle triangle

(iii) Abtuse angle triangle .

On the basis of sides

(i) Scalar triangle

(ii) Isoceles triangle

(iii) Equilateral triangle

Teacher : Good. we will see in the next class. Thank you. (P.V.B)

Student : Thank you madam.

SKILL OF USING BLACKBOARD

Components	Short form
Legibility	– L
Neatness	– N
Appropriateness	– A

Name of the trainee : V. Janani

Class : Peer group

Skill : Using blackboard

Topic : Mensuration

Duration : 6 mins.

Teacher : Goods morning.

Student : Good morning.

Teacher : Previous classes we have seen about Quadrilateral say few points about Quadrilateral. (L)

Student : Square, rectangle, Rhombus and parallelogram (A)

Teacher : Now, we are going to see Rhombus. Rhombus formula is same as parallelogram. Tell me the formula. (NIL)

SKILL OF USING BLACKBOARD

Components	1	2	3	4	5	6	7			
Legibility	✓				✓	✓	✓			
Neatness							✓			
Appropriateness		✓		✓	✓		✓			

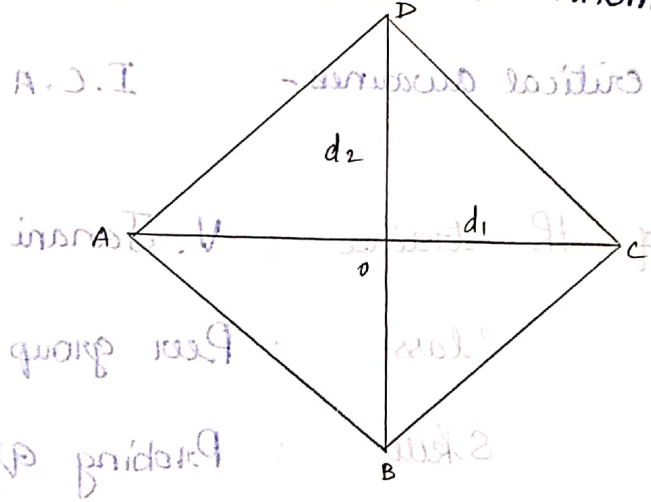
Student : , b×h sq. units (A)

Teacher : Very good. Do anyone know the properties of Rhombus.

Student : Maintain silence.

Teacher : All the sides are same and opposite sides are equal. we can devide the Rhombus into two triangle (A)↗(L)

Teacher : Let see how to draw the rhombus diagram.



Student : How to find the area of rhombus? (L)

Teacher : Area of Rhombus = $\frac{1}{2}(d_1 \times d_2)$ sq. units.

Teacher : A garden is of Rombus shape and its diagonal 18 m, 25 m What is the area of garden? (L,N,A)

$= \frac{1}{2}(d_1 \times d_2)$

$= \frac{1}{2}(18 \times 25)$

$= 225\ m^2$

Teacher : Students today we have seen about Rhombus. Tomorrow we can see about Quadrilateral. Thank you..

SKILL OF PROBING QUESTION

Components	Short form
Prompting -	S.P.
Seeking further information -	S.F.I
Refocusing -	R.F
Redirection -	R.D
Increasing critical awareness -	I.C.A

Name of the trainee : V. Janani

Class : Peer group

Skill : Probing questions

Topic : Mensuration

Concept : Properties of a Rhombus.

Teacher : In your previous classes you have learnt about quadilaterals. Name some quadilateral.

Student : Rectangle, square, Parallalogram, Rhombus.

Teacher : What is a Rhombus?

Sita : Quadrilateral.

Teacher : What are the properties of a Rhombus? (S.F.I)

SKILL OF PROBING QUESTION

Components	1	2	3	4	5	6	7	8	9	
Prompting				✓						
Seeking further information	✓	✓				✓				
Refocusing							✓		✓	
Redirection			✓							
Increasing critical awareness				✓	✓			✓		

Ram : All sides are equal.

Teacher : Any other property? (S.F.I)

Ram : Angles are equal.

Teacher : Is Ram right, Rajesh? (R.D)

Rajesh : No.

Teacher : Why? What is wrong? (I.C.A) (P)

Rajesh : Yes.

Teacher : Why is it a parallelogram? (I.C.A)

Rajesh : Because in a rhombus opposite sides are parallel and equal.

Teacher : What are the properties of a parallelogram (S.F.I)

Raghu : In a parallelogram opposite sides are parallel and equal.

Teacher : Good How are the angles in a parallelogram.

Priya : Opposite angles are equal.

Teacher : How are the angles in a Rhombus? (R.F)

Ram : Opposite angles are equal.

Teacher : Why? (I.C.A)

Ram: Because Rhombus is a parallalogram.

Teacher: Very Good. How do you compare a Rhombus with a square? (R.F)

Sudha: In both square and Rhombus all sides are equal. In a square all right angles are equal to 90°.

Teacher: Good what are the properties of a Rhombus?

Priya: Rhombus is a parallalogram. All sides are equal opposite angles are equal.

Teacher: Good.

SKILL OF STIMULUS VARIATION

Components	Short form
Teacher movement	T.M.
Teacher gesture	T.G.
Change in sensory focus	C.S.F
Change in speech pattern	C.S.P
Verbal pupil pattern	V.P.P
Physical pupil pattern	P.P.P

Name of the trainee : V. Janani

Class : Peer group

Skill : Stimulus Variation

Topic : Mensuration

Concept : Area of Rhombus.

Teacher : Today we are going to derive a formula for the area of a rhombus.

Teacher moves forwards the blackboard and writes the topic on the blackboard. (T.M.)

Teacher : Ram, come and draw the figure of a rhombus on the blackboard.

Ram : Draw the figures and name it ABCD.

Teacher : Good. (smiles) (T.G) Now look at the figures and tell me whether the rhombus can be divided into two triangles. (Stress triangle) modulate the voice (C.S.P)

Student : By drawing a diagonal we can divide the rhombus into two triangle (V.P.P)

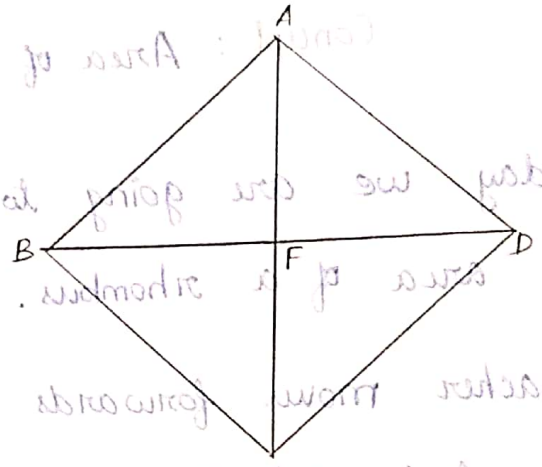
SKILL OF STIMULUS VARIATION

Components	1	2	3	4	5	6	7	8	9	10
Teacher Movement	✓			✓				✓		
Teacher Gesture		✓		✓	✓			✓	✓	
Change in sensory focus				✓	✓	✓				
Change in speech pattern		✓	✓		✓					✓
Verbal pupil pattern			✓				✓			
Physical pupil pattern				✓		✓				

Teachers nods her head approvingly (T. G)

Teacher calls one of the student to draw the diagonal (C.P.P)

Students move to the blackboard and draws the diagonal. (C.P.P)



Teacher moves to the blackboard. (T.M.)

and shows the two triangle (C.C.S.F)

Teacher : See the figures on the blackboard (C.S.F)

The area of the rhombus is equal to (stress and modulate the voice) the sum of the areas of the two triangles ABD and BCD. (C.C.S.P)

Teacher : The teacher points at the figure. (C.S.F)

How do you find the area of ΔABD?

Student : Area of $\Delta ABD = \frac{1}{2}bh$ (V.P.P)

Teacher : Good (teacher nods her head) (T.G)

Teacher moves towards the students. (T.M.)

Teacher : How do you find h?

Student : Draw the altitude for the triangle. (V.P.P)

Teacher moves towards the board. (T.M.)

draws AF perpendicular to BD.

Teacher : Look at the figure (C.S.F) (pauses) (V.P.P)

How do you get the attitude for Δ BCD.

Student : Draw a perpendicular from c to BD. (C.S.P)

Teacher calls one of the student to altitude for the Δ BCD student moves forward the blackboard and draws CF perpendicular to BD. (P.P.P)

Teacher : Thus (C.S.P) we have area of ABCD = $\frac{1}{2}$(BD × AF) + $\frac{1}{2}$ (BD × CF) teacher with hand movement (T.G.)

shows $\frac{1}{2}$ BD is a common factors

Teacher calls one of the student to do the simplification.

Student : Area of ABCD = $\frac{1}{2}$ BD (AF + CF)

Teacher : Look at the figure (C.S.F) and tell me what does BD represent.

Student : BD is a diagonal. (V.P.P)

Teacher : What is AF + CF (stresses) (C.S.P) equal to the teacher moves to the blackboard and moves her hand (T.G) over A.F and C.F to show AF + CF is another diagonal.

Teacher : Therefore (pause) (modulates the voice) (C.S.P)

Area of Rhombus = $\frac{1}{2} d_1 \cdot d_2$ where d_1 and d_2 are the diagonals.